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ABSTRACT

This technical report details all phases of a study to explore how an ecological perspective in human development, as conceptualized by Urie Bronfenbrenner, could be used as an analytic framework for discerning patterns of relationships among the environments of home, school, and work and resulting implications for youth development. (A summary is available as CE 027 940.) Chapter 1 reviews the problem and relevant literature. Chapter 2 discusses the adaptation of the ecological model by developing three hypotheses and defining elements of linkage between settings in terms of variables which could be defined in operational terms, quantified, and tested statistically. Chapter 3 presents data analyses taking into account demographic characteristics of surveyed youth to test for patterns of relationship among elements of their ecological environment and scores on the dependent measures. These observations are reported: (1) environments in which youth form relations with adults and personal characteristics account for a portion of variance in scores on the dependent variables; (2) the independent variables appear to predict how youth perceive adults and relate to them; and (3) personal characteristics, characteristics of home environment, and outside experiences contribute to youths' ease with adults. Chapter 4 contains recommendations for research and implications for policy. Questionnaires and additional tables are appended. (YLB)

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THE ECOLOGY OF YOUTH PARTICIPATION IN WORK SETTINGS: IMPLICATIONS FOR LINKING HOME, SCHOOL, AND WORK FOR FACILITATING COMMUNICATION BETWEEN YOUTH AND ADULTS

Technical Report

by

Deborah Dye Coleman
Carol A. Beckman

Learning-in-Work Research Program
Richard J. Miguel, Program Director

The National Center for Research in
Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210

1980

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FOREWORD

The work setting as an environment in which young adults learn about work roles and workers is assuming greater respectability with parents, employers, and educators. One could say that there is momentum nationwide to promote work experience for all young adults prior to leaving high school. Seeking to bring together the worlds of school and work, federal and local agencies have created a number of work experience programs. At the same time more and more youth are seeking part-time employment in conjunction with continued schooling. Our concern is that merely allocating time in school and work is not enough to promote positive developmental opportunities which could supplement prior experiences in school, home, and community.

Under sponsorship of the National Institute of Education, the Learning-in-Work Research Program at the National Center has conducted basic research on experiential programs which place youth in work settings as part of their education. The ultimate goal is that by better understanding how these programs work, research will assist in the eventual improvement of their design and operation. This is the final report of a two-year effort to understand how experience in interacting with older adults in a work setting together with prior and concurrent experiences contributes to youths' ease in communicating with adults and perception that adults can empathize with them. Data were collected to enable the researchers to apply a small part of Dr. Urie Bronfenbrenner's ecological model of human development to analyze youths' transition from school to work within an ecological framework.

For the conceptualization of the study we are indebted to Dr. Urie Bronfenbrenner, Jacob Gould Schurman Professor of Human Development and Family Studies, Cornell University. Dr. Bronfenbrenner kindly supported our desire to adapt part of his theory of a human ecology for this study. Further, his review of a draft of the study and suggestions for additional analysis contribute to planning future research.

Special appreciation is extended to Dr. E. S. Cook, Superintendent of the Gainesville City School District, Gainesville, Georgia; Charles Dyarmett, Supervisor of Vocational Programs, Gainesville High School; John Williams, Peggy Glass, Terry Edmonds, and Kay Young, of the professional staff of Gainesville High School whose competent assistance made the study possible;

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Robert E. Taylor
Executive Director
The National Center for Research
in Vocational Education

EXECUTIVE SUMMARY

Today one hears a lot of discussion about the need to link home, school, and work to assist youth in making a transition from school to work. However, there is little research which investigates how differences in relationships among the environments of home, school, and work might influence opportunities for youth development.

In hopes of contributing to needed research in this area, this study explores how an ecological perspective in human development as conceptualized by Dr. Urie Bronfenbrenner, can be used as an analytic framework for discerning patterns of relationships among the environments of home, school, and work and resulting implications for youth development. Specifically, the study tests three hypotheses regarding how linking youth participation in the settings of home, school, school activities, community activities, work experience programs, and work may account for variations in scores on two scales measuring youths' perceptions of their communication with adults.

A total of 320 high school juniors and seniors from a comprehensive high school completed questionnaires designed to obtain measures on the variables used in an analysis model. Analysis of covariance was used to determine patterns in the way the environments of home, school, and work are linked and how they relate to more positive scores on the dependent measures. In addition, school personnel prepared in-depth descriptions of three programs which place youth in work settings as part of their education.

CHAPTER I

PROBLEM AND LITERATURE REVIEW

Introduction

One of the most pressing concerns facing our nation today is how to prepare youth for employment. Hamilton (1980) in his review of research on work experience and employability presents five factors as being critical for people to find, hold, and work productively in jobs. These are (1) basic academic skills, (2) positive work orientation and attitudes, (3) job-related skills, (4) job search skills, and (5) work experience.

This study uses the systems approach of ecological research (Bronfenbrenner 1979) to take a close look at environmental relationships affecting two of the factors on this list, attitudes and work experience. The attitudinal dimension we look at is the view youth hold of their relationships with adults in terms of their communication with adults. Communication is further broken down and studied as (1) sense of ease in talking with adults and (2) a feeling that adults are able to understand the views youth hold. In this study two kinds of work experience are analyzed: participation in a program which uses experience in work settings as a part of an educational program and holding a part-time job.

Using an ecological model we can study the functional linkages among the microsystems in which youth develop: family, peer groups, school, and community groups. Further, we can analyze experience in work settings as a separate and additional setting in order to understand how it can be effectively linked to prior experience, thus allowing work experience to serve as a developmental opportunity for youth.

The potential contribution of ecological research designed to understand the linkage among school, home, community, and work, is seen if one considers the prominence of the question of how to relate youth to their future roles as adults has taken in national debate and the relative absence of meaningful research in this area.

In the introduction to the report by the National Commission on Youth, the director, Frank Brown, summarizes the very

large problem area from which this study is drawn. He writes:

> Perhaps the greatest challenge facing American society is the creation of new environments for youth. These new situations must be based upon a richer mix between youth and adults.
>
> The family stands almost alone, weakly assisted by the teacher-student relationship, in suggesting a framework of communication between the young and the old. The relationship of child to parent carries nearly the entire responsibility for cross-age communication. This paucity of youth/adult contacts makes the transition to adulthood a long and complex process (Brown 1980, p. xi).

In our work as researchers in the Learning-in-Work Program of the National Center for Research in Vocational Education, we have come to believe that experience in work environments offers one type of meaningful opportunity that enables youth to interact with adults and that promotes cross-age communication. While that opportunity may be present, our research also shows that there is a lack of basic research on the perspectives different youth carry with them to a work setting regarding communication with adults and how these perspectives are reinforced, modified, or negated through experience in work settings.

The need for such research is acute at a time when across the nation millions of youth are in work settings as employees, apprentices, interns, observers, or volunteers. Many choose part-time employment for pay, or as an alternative to spending that time at home, or at social or school activities. Further, increasing numbers of youth spend time at work as part of a variety of programmatic efforts to give them opportunities to prepare for employment. In these programs the employment skills which are developed vary from specific vocational ones to work habits and attitudes. Developing career awareness and self confidence also falls within the range of employment-related qualities or skills which such programs hope to impart to their enrollees. While there are numerous evaluations of such work programs and assessments of program participants, there is still little understanding of how experience in a work setting can best serve as a developmental experience in terms of improving youths' perspectives toward adults and their ease in communicating with adults.

For our purposes in order to function as a developmental setting, work experience would build upon the previous

experiences youth have had with adults by enabling them to perceive new dimensions of adults and adult roles. Further, it should call upon and require improvement in previously developed skills in communicating with adults. As a bridge from the role of student to that of worker, the experience should enable youth to begin to observe the subtle ways in which successful and satisfied workers learn to accomodate the concurrent demands for fitting into the work environment with their own needs for self expression, thereby balancing personal and career demands. Still another aspect of work as a developmental experience is to assist youth in moving away from their stereotypic views of older adults and in beginning to relate to them as individuals, each with his or her own combination of desirable and less desirable qualities and his or her own potential as a resource to youth.

Our own observations of a number of programs which place youth in work settings suggest the need to identify the aspects of work experience, as well as the relationships between the environments of home, school, and work that support and maximize developmental relationships with adults. For example, it appears that prior experience with peers and adults is an important factor in determining the youth who will seek work settings either for employment or education, how youth will relate to adults as coordinators and workers, and what perspectives youth will have of adults in general. At the same time, experience with adults who are a part of the program (coordinators, supervisors, or coworkers) enhances prior and concurrent experience to reinforce, negate, or question prior learning. Another observation is that some youth who select intern-type work experiences seem to be more "adult" and may be more at ease in work environments with older co-workers than with their peers. Similarly, youth who are ill at ease with older adults at school or at home may avoid experience in work settings predominated by older workers. These youth may be the ones who most need the type of adult interaction provided by work experience.

In the first year of this research, scales were developed to assess(1) to what extent youth perceive and use adults as a significant reference group and (2) the characteristics of youths' relationship in the work environment which may influence their perspectives. Use of adults as a reference group contained subscales labelled (1) empathy, (2) helpfulness, (3) communication, and (4) consultation. Subscales of characteristics of the work environment were (1) feedback, (2) hierarchical interaction between supervisor and employee, (3) lateral interaction with coworkers, and (4) challenge. A random sample of sophomores, juniors, and seniors attending a central high school in Oregon was selected as the study population. Youth were grouped as follows: those having no experience in work settings, those with independent part-time work experience, and those with program-related work experience (experience-based career education or cooperative education). For analysis, youth were also grouped

by sex, race, grade level, and participation in extracurricular activities. Of the eight subscales the communication and empathy scales had the greatest reliability and capacity to discriminate among groups. While our findings showed close to significant differences for these scales, regression analysis showed that the strongest predictors of a positive score for communication and empathy are grade level and participation in extracurricular activities. This suggested some kind of natural progression of age, grade level, and extracurricular participation so that success in some settings (classroom, teams, clubs, etc.) permits success in more complicated or different settings, such as work. The effects of the environmental characteristics of the work setting as defined in our scales were not statistically significant.

Problem

Many methodological issues and problems contributed to the lack of a significant relationship between measures of work environment and measures of youths' relationship with adults. At the same time, a broader analysis framework was needed to enable us to account for the influences of previous and concurrent experiences as represented by grade level and extracurricular activity. Therefore, in the second year of the study we have applied Dr. Bronfenbrenner's concepts of multisetting participation and mesosystem support networks as an analytic framework in which to describe how experience in a work setting can function both as an additive and developmental experience. Specifically we define home, school, experience in each work setting and experience in each activity in which an adult is present, as separate settings. The presence of persons in several settings whom a youth knows directly or indirectly forms transition links among settings. Interest shown by an adult in the activities of youth in work settings is a support link. Our goal is then to discern patterns of relationships among settings which contribute to improved communication between youth and adults.

Literature Review

The first phase of this study considered whether participation in experiential education programs facilitates adolescents' transitions from the roles of high school students to those of adult workers (Coleman, Beckman, and Wheatley 1980). Symbolic interactionism, or reference group theory, was chosen as the conceptual framework for the study because of its emphasis on characteristics of the person and the environment, and, more importantly, the interaction of the two. Experiential programs

fit into this framework because they provide worksite experiences which enable and encourage students to include adults within their reference groups in the persons of program coordinators, work supervisors, and coworkers.

In the literature review, we discussed three topics to lay the groundwork for the study. First, we looked at some issues of adolescence, including (1) an adolescent subculture defined in part by age segregation and the concept of a generation gap, (2) insulation of the schools and their often rigid nature which can bury individual needs of students, and (3) concerns about the transition from youth to adulthood. For a further understanding of adolescence and its tasks, Greenberger and Sorensen provide a model of psychosocial maturity which integrates psychological and sociological views of the person (Greenberger and Sorenson 1974). They have devised three categories of societal demands on individuals (1) capacity to function independently, (2) capacity to interact adequately with others, and (3) capacity to contribute to social cohesion. The authors see these as tasks which schools should promote and monitor.

The second topic was learning adult roles as understood in the context of reference group theory (Charon 1979). Through interaction with adult workers at the work setting, the student has access to new perspectives, attitudes, symbols, and role models. The opportunity to adopt the role of an adult worker enables the youth to become more comfortable in interacting with adult workers. This exposure also enables the student to communicate and empathize with adults, an experience which should facilitate the process of moving from the role of student to that of worker.

The third topic was programs which place youth in work settings. A major issue is the problems youth encounter in their transition from school to work as discussed by Silberman and Ginsburg (1976). Related issues discussed were the need for linking education and work and the institutional arrangements for doing so; the need for schools to prepare students for the world of work; types, effects, and evaluations of existing programs; and the need for further research on these issues.

Specifically, we have examined how interaction with older adults at the workplace affects student perspectives of adult workers. As an effort to further understand these programs and ultimately offer suggestions for enhancing their success, Urie Bronfenbrenner's (1979) ecological approach to human development offers an interesting framework in which to study the programs. The following section will attempt to describe Bronfenbrenner's ecological framework as it applies to the present study.

Ecology is the science of the relationships between organisms and their environments. The central theme of Bronfenbrenner's ecology of human development, and that which makes it most attractive for the present study, is the very critical interrelationship between the developing persons and their environments. This combines the traditional focus of psychology on the individual with the traditional focus of sociology on the environments or societies within which individuals function. It then goes one logical step further and studies the dynamic relationships between person and environment.

Bronfenbrenner views the ecological environment as a set of nested structures within which the developing person experiences the world. It is important to note that the way the person perceives the environment is more significant than objective reality. At the innermost level of the nested structures is the microsystem, the immediate setting in which the developing person functions. Included are the home, the classroom, the workplace, and all the other places where a person spends time. Immediately outside this innermost level is the mesosystem, a set of interrelations between two or more settings in which the developing person becomes an active participant. The mesosystem may include home and work, school and church, or any of the other microsystems in which the person participates. The developing person is the primary link which binds the mesosystem. The next circle is the exosystem which consists of one or more settings that do not directly involve the developing person as an active participant but in which events occur that affect, or are affected by, what happens in settings that do contain the developing person. The exosystem can include the parents' workplaces and social networks, the neighborhood, the religious and social organizations, the legal system. The final circle is the macrosystem which encompasses and is made up of the micro-, meso-, and exosystems. It refers to the consistency or pattern observed within a given culture or subculture. Although cultures and subcultures differ qualitatively, they have in common certain types of settings, roles, relations, and intersetting connections. The macrosystem includes societal institutions and ideologies, e.g., in the United States, democratic form of government, the work ethic, capitalism. This ecological framework will be discussed later as the conceptual framework of this study is further developed.

It may be interesting to look at a few other authors whose writings fit into an ecological framework. Moos (1979), for example, presents a social-ecological framework to evaluate educational settings. He states that the social-ecological setting in which students function affects their attitudes and moods, behavior and performance, and self-concept and general sense of well-being. He discusses a conceptual framework that illustrates the relevance of four domains of environmental

variables to the evaluation of educational settings: the physical setting, organizational factors, the human aggregate, and social climate. He focuses on the extent to which the social climate is determined by and mediates the influence of the other three domains. For example, the influence of the physical environment (open-plan classes) on student development may be mediated by an effect on the social environment (increased cohesion). Cohesion and involvement in a work setting determine and are determined by employees' concern about and commitment to their jobs and the enthusiasm and constructiveness they display.

Focusing on another aspect of an ecological systems approach, Greenberger et al. (in press) are investigating what they consider an unexplored phenomenon of adolescence: the world of work. Having developed a psychosocial model of maturity which uses a person-environment-interaction concept, they look at adolescent participation in the part-time labor force and its effect on family and peer relations. Their preliminary findings indicate that adolescents who work are learning about relationships, although the workplace is not conducive to close personal relationships. It is possible that various characteristics of adolescents' jobs, such as working alone, under time pressure, on irregular schedules, combined with the nature of the job itself, make their work experiences of marginal value for developing meaningful relationships with others or positive attitudes toward their future full-time work.

Woditsch, in a paper for the National Institute of Education, provides some very interesting ideas on the purposes of schooling which complement the concept of an ecological systems approach to human development. Role-taking skills teach students to fit into societal prescriptions for individual behavior in the role of parent, citizen, consumer, and worker. Role-making skills develop a capacity to make one self-competent, since they involve a set of highly transferable, generic competencies. Though both role taking and role making are useful skills, the author argues that the latter is neglected by educators. In a systems model with its rule of dynamic relationships, it is useful to consider what kinds of things students learn and what will best enable them to cope with a changing environment.

Hamilton (1980) convincingly argues for an ecological perspective to comprehend how work experience affects employability. In his review of research on work experience and employability he suggests the strength of an ecological perspective is that it assumes reciprocal, rather than one-way relations. He further recommends that attention be paid to the interactions among the workplace and the other settings in which youth develop.

Ecological research employs a systems approach. Systems theory surrounds and permeates the preceding discussion of person-situation-interaction. The major characteristic of a systems model that makes it so appropriate and useful is the dynamic quality of the connections and interactions among systems (Compton and Galaway 1979). We see that each person acquires a unique micro-, meso-, and macrosystem perspective. This perspective contributes to how an individual will relate to new experiences in new environments.

Systems studies, and in particular Dr. Bronfenbrenner's ecological model of human development, present testable rules for understanding how components of a social system relate, thereby making it possible to hypothesize and then test rules regarding how to relate the environments of home, family, school, community, and work. In particular it is possible to examine selected interrelations existing among multiple settings in which the developing person actively participates (Bronfenbrenner's mesosystem). In order to examine interrelations among settings, we will first describe some significant characteristics of the immediate setting containing the developing person and some patterns of activities in this setting (Bronfenbrenner's microsystem). Specifically, we will be looking at the multisetting participation of high school students who participate in experiential learning programs which place them in a variety of work settings. Our purpose is to better understand how these programs assist youth in their transition from the roles of students to those of adult workers. We will compare background characteristics with students' status as nonworkers, independent workers, and program workers, and examine these relationships as to the capacity for communication students feel with adults.

CHAPTER II

RESEARCH APPROACH

An Ecological Approach

As presented by Dr. Bronfenbrenner (1980), ecological research requires (1) looking at environmental influences as independent variables, (2) looking at the environment in which one lives, and (3) looking at links between settings. In this study we look at the social boundaries between the subsystems (microsystems) of home, school, community, and work. Following systems theory we assume that relationships among systems and components within systems place restrictions on individuals which make the transition to new systems problematic. However, systems can be related in ways which are more or less functional in assisting persons in the transition process.

Using Dr. Bronfenbrenner's model, each setting is a microsystem.

> . . . a pattern of activities, roles and interpersonal relations experienced by the developing person in a given setting with particular physical and material characteristics (Bronfenbrenner 1979, p. 22).

We are assuming that there is an adequate difference in the activities performed; the roles assumed; and the content, reciprocity, and balance of power between youth and adults in the settings of home, school, and work to treat them as different microsystems. On the same basis we made a distinction between experience in a work setting resulting from an independent search for employment and experience in a work setting related to an educational program.

In looking for how systems can be related in a functional manner to assist youth in making the transition to work environments, we selected the following propositions from Dr. Bronfenbrenner's model of an ecology of human development.

> A mesosystem comprises the interrelations among two or more settings in which the developing person actively participates (Bronfenbrenner 1979, p. 25).

> The developmental potential of a setting in a mesosystem is enhanced if a person's initial transition into that setting is not made alone, that is, if he enters the new setting in the company of one or more persons with whom he has participated in prior settings (Bronfenbrenner 1979, p. 212).
>
> The developmental potential of a setting is increased as a function of the number of supportive links existing between that setting and other settings (Bronfenbrenner 1979, p. 215).

In applying the propositions which Dr. Bronfenbrenner presents, our task was to convert these statements of proposed relationships to hypotheses and then to define elements of linkage between settings in terms of variables which can be defined in operational terms, quantified and tested statistically. The research hypotheses and definition of variables follows.

Hypotheses

In our adaptation of Dr. Bronfenbrenner's model, the research objective was to determine how different patterns of linking the microsystem of a work setting with other microsystems in which youth participate contribute to youth perceiving adults as capable of understanding their needs and feeling at ease communicating with adults. In addition, we hoped to identify characteristics of the participants and their family environments which may influence how youth will engage in and interpret experience in work settings.

In this regard we have made a slight departure from the systems model as presented. In a systems approach communication is often described as an independent variable which reflects a process occurring between levels of the system. Communication as measured in this study is a predisposition to communicate with adults and hence a intermediary variable in a systems model. We use communication as a dependent variable in the analysis. The following specific hypotheses were tested:

1. There is a significant and positive relationship between participation in multiple settings and the dependent measures, empathy and communication.

2. There is a significant and positive relationship between the number of transition links between the microsystems of home and work, school and work, home and program, and school and program; and scores on the dependent measures, empathy and communication.

3. There is a significant and positive relationship between the number of support links for youth participating in work settings and scores on the dependent measures, empathy and communication.

Variables

As we asked ourselves what factors may influence how different young people perceive and react to different environments in which adults are present, we thought about both characteristics of the youth and the home environment. Age, sex, and race were defined as environmental characteristics; the reaction or disposition such characteristics engender in the environment creates an environmental influence. The second group of environmental variables we selected are characteristics of the family setting which we believe may influence how youth interpret their experience with men and women in work settings.

For this study we treated home, school, school activities, other activities, and work settings as different environments in which youth form dyadic relationships with adults. The work setting is the environment which we consider a potential developmental setting for learning to communicate with adults. The student is the developing individual within the microsystem of a work setting. Participation in a work setting may occur as a part-time job or as part of a school-based program which uses the worksite for education, training, or expanding career awareness.

A further explanation of the major groups according to work and program experience and the treatment of extracurricular activities is in order. Using both teacher classification of students by the work experience programs offered as well as response data on program participation and employment we initially classified youth as having no work or program experience (00); having programmatic experience only (01); having independent experience in work settings only (10); and having both independent and programmatic experience in work settings (11). Program-related experience was defined as enrollment in the programs offered by the school. An initial analysis of our questionnaire responses required modification of the initial variables. Program experience only (01) was reclassified with (11) as a variable because of few respondents in that category. Two program groups were added: CETA Summer Youth Programs and a category containing miscellaneous programs.

In an attempt to obtain a measure of the relative degree of participation and variety of activities in which an individual student is involved, participation in school activities was defined as (1) no participation, (2) some participation, and (3) a lot of participation. We also asked students to enumerate

membership in other activities such as scouting, music groups, and volunteer work, versus no membership.

In using an ecological model to study human behavior the research assumes that the way and extent to which several settings are linked influences what may occur within a single setting. Entry in a new or different setting involves making a transition to a new environment. Initial experience in a work setting requires a major transition to the norms, roles, and activities of that environment. On a daily basis movement from home to school to work involves transitions. During the day as students move from home to school, from school to work, and from work to home, they may be eased into the transition from one environment to the other through supports in the mesosystem. If the student is accompanied initially to a new work environment by a friend, teacher, or other adult with whom the youth has a positive relationship, then the transition to that new environment will be smoother and will have the potential for earlier success than if the student goes alone. Similarly, if parents and friends are involved appropriately in the selection of a work experience setting, the experience that youth has should offer greater opportunity for growth than if these conditions were not present. This means of bridging environments and providing continuity establishes a firmer basis from which the individual can try out new perspectives and behaviors.

The additive quality of participation in settings suggests the concept of "the rich get richer and the poor get poorer." For example, a student may first join church choir, then high school choir, then a school club, maybe a team sport, and then may consider a part-time job. This sequence can be seen as both building social skills and using success to breed further success. Development is thereby enhanced. With this pattern we hoped to raise the question of whether we could predict a proclivity to enter a work environment, capacity to feel at ease there, and perception of adults as real individuals instead of stereotypes by the number of experiences youth have had in extracurricular activities, community activities, and work settings.

Dr. Bronfenbrenner's propositions say that even without a direct link to a new environment, support can be provided indirectly. For example, having friends at the workplace and talking about work with friends, teachers, or parents can provide necessary encouragement, guidance, and other supports to maintain oneself in the new setting. Further, the number of supportive links itself is significant.

In further expansion of this hypothesis, Dr. Bronfenbrenner proposes that if the supportive links are made by persons with whom the person has a primary dyadic relationship, such as family members or teachers, there is greater potential for development

in the new setting. Following this line of reasoning, if parents, teachers, or other primary persons are nonsupportive or not present as possible linking agents, there is less opportunity or perhaps no opportunity for development in the new setting.

We chose these hypotheses to aid us in looking for patterns of relationships across environments that may help account for the differences in how youth benefit from experience in work settings. For measurement purposes we converted Dr. Bronfenbrenner's hypothesis of mesosystem linkages to questions designed to determine whether conditions for linkage are present. We designated links which assist youth in making a transition to a new environment and links which provide ongoing support to the participant. Links were further categorized as pertaining to work experience (links 3) and to program-related work experience (links 4).

A summary of the independent variables used for the study appears in figure 1. These variables are categorized as background characteristics, multisetting participation, support links, and transition links.

The ecological model of human development is a model for understanding how environmental systems influence the potential for human development in a given setting. What is considered human development depends on the interest of the researcher. For our purposes, development in adolescence includes an increased sense of ease in communicating with adults and a perspective of adults as capable of understanding the needs of youth and serving as a resource to them. Our assumption is that in order to move toward a coworker relationship, youth need to view adults as individuals from whom they can learn. The ease or comfort felt by youth in communicating with adults and their perspective of adults' capacity to empathize with them are dependent variables measured by the scales, communication and empathy. Figure 2 shows the items making up the communication and empathy scales.

In addition to creating these two dependent variables, we asked a direct question of whether experience in a work setting changed the way the respondent viewed adults and if so, how. With this question we hoped to gain insight into a positive or negative change, and to gain an understanding of what students will list as factors contributing to change. Also we hoped that this response would help us determine to what extent experience in work settings may be demanding, difficult, or even unpleasant, and though rated as negative, still developmental and enriching for youth.

FIGURE 1: Independent Variables

Background Characteristics

Personal Characteristics

SEX — Male or Female as indicated by respondent.

RACE — White or Minority as taken from permanent records. Minority in this case includes Blacks and Orientals.

GPA — Grade Point Average taken from permanent records; based on four point scale.

AGE — 15, 16, 17, 18, and over 18 years of age as indicated by respondent.

Family Characteristics

WHO LIVE WITH — Mother; Mother and Father; Father; Guardians; Other (such as spouse or relative)

PARENT EMPLOYED — Father only is employed; Mother only; both Father and Mother; neither.

Multisetting Participation

PARTICIPATION IN SCHOOL ACTIVITIES

PARTICIPATION IN OTHER ACTIVITIES

NUMBER OF JOBS HELD

WHO YOUTH LIVE WITH

SUPPORT LINKS-3 IN WORK ENVIRONMENT

Item Number*

1. Having parents who know the employers
2. Talking about work experiences at home
3. Talking about work experiences with teachers
4. Talking about work experiences with friends
10. Having an employer visit the home
11. Having parents know a lot about school, job, employer, and program (if applicable)
12. Having parents favor participation in current job

TRANSITION LINKS-3 IN WORK ENVIRONMENT

Item Number*

5. Having school friends at the same work site
6. Having family member at work site
7. Having family member know someone at work site
8. Knowing someone personally at work site before beginning work
9. Talking with work supervisor prior to starting work

SUPPORT LINKS-4 IN PROGRAM

Item Number*

2. Parents talking with coordinators or counselors about student work experiences
3. Student and coordinator, coordinator and employer, and parents and coordinator meeting frequently
4. Coordinator visiting student's home
8. Parents/guardians feeling happy about student participation in program

TRANSITION LINKS-4 IN PROGRAM

Item Number*

1. Parents accompanying student for first discussion with coordinator about entering program
5. Student knowing program coordinator personally before entering program
6. Coordinator accompanying student on first visit to employer
7. Knowing other students in work experience program prior to entry

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* See Parts III and IV of the questionnaire for the actual questions (Appendix A).

FIGURE 2: Dependent Variables,
Empathy and Communication Scales

Item Number*

EMPATHY*

1. Most older adults respect student opinions.
2. Older adults are too old fashioned in their ideas.
3. Older adults are not able to understand the problems of students.
4. Older adults are willing to consider students' solutions to problems.
5. Older adults don't realize that things are different today from when they were teenagers.
6. So far as ideas are concerned, students and older adults live in different worlds.
7. Older adults do understand today's students.
8. Most older adults are not willing to listen to students.
9. Older adults are out of step with the times.
10. The best way to handle older adults is to tell them what they want to hear.
11. Older adults are forever sticking their noses into things that are none of their business.
12. Older adults don't deal with problems of students very well.
13. Older adults are set in their ways.
14. Older adults are really interested in students.

COMMUNICATION

15. I feel more comfortable around older adults than around friends my age.
16. In a group of older adults, I don't say what I think because I'm afraid they may not like me.
17. Older adults are interested in the same things that interest me.
18. Most of my friends are older adults.
19. I feel free to say what I want around older adults.
20. How well do you feel you get along with older adults?
21. How comfortable do you feel talking with your guidance counselor?
22. How often do you take time to talk with one of your teachers about things which interest you?
23. How well do you feel you get along with your teachers?
24. How often do you choose to talk with older members of your family about things which interest you?

* See part II of the questionnaire, (Appendix A).

Data Collection

In order to have a data base with which to look for patterns of linking home, work, and school, we wanted a single comprehensive high school which would meet the following criteria. It should offer at least three different programs which place youth in work environments as part of their education. To build upon the first year of the study, we wanted the programs to include experience-based career education and cooperative education. Second, we wanted a high school with students representing families with low, moderate, and high incomes. We also wanted a student population with both black and white students in the student body and in work experience programs as well. Another criterion was that the programs studied be established and successful according to local criteria used to evaluate that particular effort. The availability of school faculty who would be interested in the kinds of questions to be asked and willing to assist in data collection was another major consideration.

Gainesville High School, Gainesville, Georgia, met all of these criteria. In addition, the experience-based career education program in the school is not only well established but has as a program objective learning to relate to adults. Further the work experience programs offered--experience-based career education, distributive education, and vocational office training--are not targeted toward a specific group of students such as potential dropouts.

After selection of the school site, the next decision was which students should respond to the questionnaire. In order to limit the influence of grade level on student responses and to concentrate our attention on youth of work age, we limited our study to youth in the eleventh and twelfth grades. Since it was possible to obtain responses from all students in those grade levels, it was therefore not necessary to sample. Therefore, the population studied was all eleventh and twelfth grade students attending Gainesville High School, a comprehensive high school serving a very heterogeneous community outside Atlanta.

Of the eight subscales developed in the first year of the study we selected two which had proved reliable and valid in instrument development. Further, these scales called empathy and communication, measure the degree to which youth are at ease talking with adults and whether youth perceive adults as capable of understanding them. (The dependent variables the questionnaire measures appear in figure 2.) We then wrote questions designed to fill in the ecological framework. We wanted to elicit factual information about the involvement of self, family members, and friends in certain environments as well as questions about the degree of involvement of parents, friends, and teachers in talking about, visiting, or participating in work environments or program

experiences. In addition, we asked respondents whether, how, and why experience in work settings had changed their perceptions of adults.

Program coordinators and the school counselor who assists in enrolling students in programs were asked to provide written answers to questions about their role in the program, a description of how the program operates, facts about funding and administration of the program, an explanation of student recruitment and selection, the procedures for placing students in work settings, and a description of the means used to communicate with employees and parents. Copies of program guides, manuals, evaluation forms, and other printed materials were collected. Coordinator and counselor questionnaires appear in Appendix B.

The student questionnaire was given to all juniors and seniors present in school on one of three consecutive days during May 1980. Questionnaires were given as a group to students enrolled in experience-based career education, distributive education, and vocational office training. A total of 320 students completed the questionnaire. Race and grade point average were obtained for each student from permanent records.

Description of Programs

So far we have discussed programmatic work experience as one type of experience in a work setting. Within this broad category there are many different programs. The purpose of this section is to present an overview of the learning-in-work programs at Gainesville High School--Experience-Based Career Education (EBCE), Distributive Education (DE), and Vocational Office Training (VOT). Information was gathered from the questionnaires that were filled out by the program coordinators and the guidance counselor (see Appendix B) and from descriptive program materials they sent to us. These descriptions of the programs in which the students participate should enhance the interpretation of the student questionnaire data.

The process by which a Gainesville High School student enters EBCE, DE, or VOT may begin when that student talks with the guidance counselor who serves as a coordinator and disseminator of information to students and parents. This counselor interprets the primary purpose and entry requirements of the program and then refers students to the appropriate program coordinator. She bases her recommendations on her knowledge of the student's prior school performance and future plans. She states that students who go into these programs have usually achieved the necessary maturity level to function in a job setting. In addition, the student must have accumulated an appropriate number of credits

toward graduation, a factor that may discourage students with academic difficulties. She describes students who enter the program as individualistic, maturing, aspiring, inquisitive, adventuresome, dependable, growing, and enthusiastic.

The Programs

Each program will be described in terms of the coordinator's role, purpose and background, funding and administration, and evaluation. Similarities and differences across the three programs will be summarized after the program itself, students, and linkages have been discussed.

EBCE. The learning coordinator works on an individual basis with students to help them set goals, plan activities, use resources, and learn from their experiences. She assigns credit and contacts employers to monitor student progress.

The purpose of EBCE is to give students the opportunity to explore and evaluate career options through projects. Also included are basic and life skills. The program has been in operation for three years and has had a stable enrollment. Funding for the first two years was part D, Three Year Vocational Education Grant; the local system supported the program in its third year. Participants receive from one to three quarter hours of academic credit per quarter, according to student needs. Participants do not receive pay. Checklist and monitoring worksheets are used by coordinators, students, and employers for evaluations. Follow-up on graduates is done by personal contact.

D.E. The teacher-coordinator's role in relation to the students is to provide instruction, coordination, promotion, public relations, selection, placement, and graduate follow-up. To employers, he explains the training plans, tax credit, and evaluation.

The purpose of the DE curriculum is to provide the knowledge, skills, and attitudes necessary in distributive and marketing occupations to enable the student to work toward a career objective. Each teacher-coordinator plans a course of study that suits the needs of students and needs of the community; and that is compatible with the coordinator's abilities and background. The program has been in operation for three years and enrollment has been growing. Funding is 90 percent state and 10 percent local. Participants receive five hours of credit for the year if they meet requirements determined by a payroll grading system and class grades. Participants are paid $3.10 to $4.57 per hour depending on experience and type of employment. The teacher-coordinator and employer file evaluations of student progress. Follow-up survey is required by the state and is completed by MIS index cards filled out by the student and sent to the state for tabulation.

VOT. Some of the activities for which the coordinator is responsible include organizing conferences with prospective program students and employers, parents, administrators, advisory groups, and students seeking employment information; checking student records to determine special aptitudes and abilities prior to job placement; maintaining student personnel records; developing and preparing functional training materials for students; planning and supervising student learning experiences provided by on-the-job training with employers; coordinating visits to work-training stations; and conducting equipment and employment surveys.

The purposes of the VOT program are to provide a realistic means of meeting the vocational needs of students by giving them greater opportunity to explore and pursue their interests and aptitudes; to facilitate the transition between school and employment; to present, develop, and refine office skills necessary for job competency by providing a school-job-laboratory; and to prepare students for full-time employment following graduation and for job advancement. This is the first year of operation for VOT, which has both state and local funding. Students receive five hours of academic credit for VOT classroom work and five for satisfactory worksite performance. Most students are paid the minimum wage of $3.10 per hour. Evaluation is done by learner self-evaluation, and coordinator and employer observations. Follow-up will be done by mailed questionnaire and telephone contact.

The Students

The answers given by coordinators regarding student selection and placement in work settings were so similar for all programs that they will be discussed together. Differences relate to the purposes of each program.

Brochures explaining each program are given to all juniors and seniors in their homerooms. Teachers in business and career classes explain and promote DE and VOT. In addition, recruiting booths are set up in the main school lobby during the lunch period. Applicants for EBCE must be on schedule to graduate, have a low record of absence and no disciplinary record. They need to be good independent learners, trustworthy, dependable, and capable of handling the freedom EBCE allows. Applicants for DE must be trustworthy, able to work without supervision, able to drive and provide their own transportation. For VOT, applicants must be at least sixteen and either a junior or senior with an overall C average and a C or better average in business classes taken. For all three programs students must be available for part-time work and able to obtain parental consent.

In all three programs socioeconomic status and academic ability range from very low to very high. A large majority go to a junior college or a four-year university. In capacity to work with adults, EBCE students tend not to have worked with adults before, about half of DE students have, and all VOT students have. About half of the EBCE and DE students and ninety percent of VOT students have held part-time jobs before.

Reasons for enrolling in the programs are similar, according to the coordinators. Students seem to like learning on the job instead of at school. Most youth enrolled in the programs are involved in extracurricular activities, class activities, and/or sports. The most significant contribution of the program to the students is increased self-confidence, as well as independence, career motivation, and salable entry-level skills in DE and VOT.

EBCE is targeted toward any student who can handle the freedom of exploring careers; DE and VOT are targeted toward students interested in the distributive and business fields. Factors that discourage student participation include the stigma attached to vocational education in a school where a large number are college-bound, school requirements, the extra time required for some extracurricular activities, and the lack of enough learning coordinators in EBCE.

In the area of placement of students in work settings, again the three programs use similar criteria. Work settings must provide students with a wide range of appropriate, high quality experiences while meeting the needs of the students; and employers must be willing to cooperate in the learning experiences and evaluations. Students are placed in particular settings according to their interests and aptitudes, where they are given increased responsibility as they prove they can handle it.

Linking Home, School, and Work Experience

The reason for this set of questions on the coordinator questionnaire was to see how perceptions of coordinators fit with those of the students and how they both fit with our conceptual framework of an ecology of human development. The ecological framework suggests that the programs would be enhanced by multisetting participation.

According to these questions and the responses of the coordinators, there is minimal participation by the parents in their sons' and daughters' work experience programs.

In EBCE, the learning coordinator contacts parents from one to five times per quarter, depending on the need for communication. Students' parents do not visit them at work, nor does the learning coordinator visit students at home. Parents are invited to an EBCE open house; some have become resource people (employers). The learning coordinator accompanies a student to the worksite only if the student needs special support. The learning coordinator talks with students' employers an average of three times per quarter.

In DE, the teacher-coordinator contacts parents frequently to infrequently depending on the students' progress and job. Parents sometimes visit students at work, depending on their interest; the teacher-coordinator does not visit students at home. Some parents are resource persons, and some serve on an advisory committee. The teacher-coordinator does not accompany students to their worksites but visits the employer at least twice per month.

In VOT, the coordinator talks with each parent by phone at the beginning of the school year. One student said her parents visited her training station. The coordinator visited eleven of seventeen homes at the beginning of the school year. Parents are informally involved with the program. The coordinator accompanies a student to the worksite if she and the student agree that it is desirable. The coordinator talks with the students' employers once a month.

Summary

The coordinators' and counselors' questionnaires and the materials they sent us indicate that EBCE, DE, and VOT meet needs of both schools and students by providing alternatives to strictly traditional classroom learning. Students come to the programs already possessing most of the necessary skills for making it in the world of work. EBCE appears to meet the needs of students who are uncertain about which career path they wish to pursue, inasmuch as students are given the opportunity to try out many different work settings and to specialize when they find one they like. DE and VOT students pursue specific interests in distributive and business occupations, respectively. All three offer hands-on experience in work settings together with guidance and support from program coordinators. All three attract students with a wide range of abilities and backgrounds.

The theme of this study involves an ecological framework for human development in which multisetting participation is thought to be a critical factor for developmental success. There seems to be very little planned or unplanned multisetting

participation here; parents, employers, and coordinators seem to interact infrequently and haphazardly; and roles remain compartmentalized. This may be an area for improvement if the ecological framework proves sound. At the same time, criteria for selecting program participants include evidence that youth already demonstrate characteristics associated with adult responsibilities: trustworthiness, promptness, dependability, and responsible use of time.

Two observations therefore seem warranted. First, the current means of linking work experiences to school may not be ecologically supportive of youth who do not demonstrate adult-like worker qualities. These youth may not succeed in the programs. Perhaps taking an ecological approach to program planning and implementation would increase the likelihood that other youth could benefit. Secondly, looking at the qualities youth possess upon entering the program, one wonders whether an ecological approach to program planning could increase the extent to which the experience in a work environment challenges students and enhances skills initially developed in previous settings.

Having reviewed the work experience programs themselves and considered the type of student attracted to program participation, we will now look at the characteristics of the total sample. The following information describes the sample by demographic variables.

Characteristics of the Sample

A total of 320 students--176 juniors and 144 seniors--completed the questionnaire. Table 1 displays the distribution of the sample by race, sex, and grade. The following categories were used for classifying respondents:

Total sample--All 320 youth who filled out the questionnaire

Work experience--Youth who indicated they had held a paying job for three months or more

Programs--Youth who had been previously or were currently enrolled in a work experience program for three months or more

Three programs were provided as part of the school curriculum:

EBCE--Experience-Based Career Education

DE--Distributive Education

VOT--Vocational Office Training

TABLE 1: Distribution of Population by Race, Sex, and Grade

	Race				Sex				Grade			
	White		Black		Male		Female		11		12	
	N	%	N	%	N	%	N	%	N	%	N	%
Work Status												
Total Group	245	77%	72	23%	151	48%	166	52%	175	55%	142	45%
Work Experience	200	77%	60	23%	127	49%	133	51%	138	53%	122	47%
Program	80	71%	32	29%	50	44%	62	56%	44	38%	68	62%
Program												
EBCE	16	84%	3	16%	3	16%	16	84%	4	21%	15	79%
DE	36	95%	2	5%	29	74%	10	26%	13	33%	26	67%
VOT	10	83%	2	17%	0	00%	12	100%	3	25%	9	75%
CETA	2	17%	10	83%	7	58%	5	41%	5	42%	7	58%
Other	16	52%	15	48%	11	35%	12	65%	19	61%	12	39%

* There are between 3-9 missing respondents for sex and grade by program classifications and work status.

The following additional programs were listed by the students:

CETA--Comprehensive Employment Training Act, Summer Youth Programs

Other--Work experience programs which could not be identified as belonging to one of the programs defined by school or CETA

Looking at racial composition of the enrollments, we see that the relative participation of whites and blacks in groups representing the total sample, work experience, and programs is about the same and reflects the racial composition of the total group, which is approximately 77 percent whites, 23 percent blacks. As to participation by blacks and whites by specific program, the number of respondents per program classification is so small that the addition of one student greatly changes the racial balance as reflected by percentages. One can say that the overall ratio of white participants to blacks is three or four to one with two exceptions. In distributive education, the ratio is twelve to one. In CETA, the ratio is reversed with one white participant to five blacks. Without much more information about the distributive education program, it would be inappropriate to assign any significance to the difference in racial balance exhibited by that program. If minority status reflects lower socioeconomic status in the Gainesville area, that fact could account for greater minority participation in CETA, as well as in the "other" category. In general, participation in work and work experience programs reflects the overall racial composition of the student body.

The distribution of students by sex across categories reveals some interesting patterns. Looking first at the major groups of work experience status, we see that there are slightly more females than males in the population, which is reflected in each of the major categories. However, looking at specific groups we see that the ratio of females to males in EBCE is five to one; in DE, almost one to three; and in VOT there are no males at all.

Looking at grade level, we see that there are a higher percentage of youth in programs in the twelfth grade than in the eleventh and also that a higher percentage of youth in school-related programs are in the twelfth grade. Youth in CETA are about equally distributed between the eleventh and twelfth grades. More youth who indicated "other" as program are in the eleventh grade than in the twelfth grade.

Another screen used to consider and, therefore, to classify students in high school is whether they are thought to be <u>good</u>

students. That assessment is often based chiefly on the student's grade point average (GPA) rather than aptitude or effort. For our purposes, GPA is important as an indication of "fit" or chance for success in meeting the normative expectations of school, as defined by an administration and teaching staff who are older adults. Another way GPA may be important to serve as a barometer of other characteristics which may make students more or less likely to allocate time and interest to gaining experience in work settings or to achieve acceptance in various work environments. For example, some students who earn very high grades do so with a great investment of time and interest. Such students may perceive time spent in a work setting as not worth the effort. On the other hand, students with low grades may also not be able to put time into work environments or may lack the basic skills which would make them candidates for employment, internship, or training experiences. Also we believe that there is a minimum level of activity, competence, and motivation required to get along in either school or work. Those who are less psychologically involved in school, as determined by a GPA below 2.0, would be unlikely to combine employment or a work experience program with school attendance.

Tables 2 and 3 were prepared to provide two different ways of considering GPA for students grouped by employment status. Table 2 shows GPA for the person at the fiftieth and ninetieth percentiles of the distribution for each group. Looking at this table, we see that overall the distribution of GPA is very similar across the groups. This fact suggests that many of those who participate in work environments while they are in school are <u>good</u> students.

Table 3 displays the percentage of students with GPA's ranging from 1.0-2.4, 2.5-3.0, and 3.1-4.0 who are in the total sample, in work experience, and in work related programs. For the program group, there is a higher percentage of youth with a 1.0-2.4 GPA. Programs are more highly representative of the average or "C" student. One should note that this category includes CETA and "other." Students who are independent workers are less represented than the total sample in the 3.0-4.0 category.

As noted in the review of the first year of the study, participation in extracurricular activities was a major predictor of scores on the dependent variables. For that reason it is important to look at reported participation in extracurricular activities. Further, in terms of multisetting participation, the amount of prior experience in additional settings in which there are significant role relationships with adults reveals some prior practice in making a transition to a new environment in which adults are involved in some capacity.

TABLE 2: Grade Point Average by 50th and 90th Percentiles

Work Status	GPA at 50th Percentile	GPA at 90th Percentile
Total Sample	2.7	3.7
Work Experience	2.7	3.7
Program	2.5	3.0
Program		
EBCE	2.8	3.5
DE	2.5	3.1
VOT	2.6	2.9
CETA	2.3	2.8
Other	2.3	2.9

TABLE 3: Grade Point Average by Work Status and Program

Number and Percent by GPA Category

	1.0 - 2.4		2.5 - 3.0		3.1 - 4.0	
Work Status	N	%	N	%	N	%
Total Sample*	64	20%	118	37%	137	43%
Work	85	33%	104	40%	71	27%
Program	53	47%	47	42%	12	11%

* 1 Missing

In order to discover a pattern of participation in work environments that may be significant, it is most useful to look at the extreme response categories: no participation or a lot of participation. As in the previous tables, the patterns of responses for students in the major categories shown in table 4 are very similar. At the program level there are some differences of interest. The students enrolled in EBCE report the greatest involvement in activities. In contrast, twenty-five percent of the students in VOT report no participation in activities. Youth with experience in CETA programs represent the normal distribution of participation, ranging from none to a lot. From this information, one could expect that the youth most facile in interpersonal relationships with adults would be those enrolled in EBCE and the least, those in VOT. In both of these programs, there are many more girls than boys.

The major environment in which youth form dyadic relationships with adults is the nuclear family. We considered it important to investigate whether one parent or two parents were present in the home and which parent was employed. The fact that a youth had access to two parents broadens the scope of interaction, and also makes it possible to have a relationship with both an adult man and woman. Also, the question of no parent, one parent, or both parents suggests a family disposition toward employment, particularly in regard to support of work experience for young women.

TABLE 4: Participation of Youth in Extracurricular Activities by Work Status and Program

	Percent Responding By Level of Participation	
Work Status	None	Some or a Lot
Total Sample	15%	85%
Work Experience	14%	85%
Program*	17%	83%
Program		
EBCE	6%	94%
DE	10%	90%
VOT	25%	75%
CETA	25%	75%
Other	14%	86%

* 5 Missing Responses

Table 5 shows the percentage of students in each group who live in families where two parents are present and the percentage who live in families where both parents are employed outside the home. Across the major categories, approximately seventy-five percent of the students are in families where two parents are present. Looking at specific programs, we see a striking difference between VOT, EBCE, and DE students, nearly all of whom live in families where two parents are present, and CETA students where fewer than half of the students live in two-parent households. Nearly half of all students live in households where they have access to a male and female role model of worker. For the students in CETA, where there are fewer two-parent households, only about one-third of the students have two employed parents at home.

TABLE 5: Who Students Live With and Which Parent Is Employed for Youth by Work Status and Program Membership

	Percent Responding*	
	Live With Father & Mother	Father & Mother Work
Work Status		
Total Sample	78%	37%
Work Experience	79%	49%
Program	74%	50%
Program		
EBCE	90%	63%
DE	79%	56%
VOT	92%	50%
CETA	42%	33%
Other	65%	40%

* Percent rounded to nearest whole percent.

The analysis presented in the next chapter takes each of these demographic characteristics of youth surveyed into account in the model designed to test for patterns of relationships among elements of the ecological environment of youth and scores on the dependent measures. In this way we not only consider participation in work or programs but also the interaction of such characteristics such as race, sex and GPA.

CHAPTER III

ANALYSIS AND FINDINGS

Ecological Model

The analysis objective was to construct a model through which we could identify patterns of relationships among independent and dependent variables which in real life situations are interrelated. A core model was constructed that combines the independent variables of background characteristics, multi-setting participation, and support and transition links. These variables were summarized in figure 1.

How youth perceive their communication with adults was treated as two dependent measures that for convenience we called communication and empathy. The first variable, communication, measures the relative ease or comfort youth feel in approaching and talking with adults who are twenty years of age or older. The term older adult was used in questionnaire items to acknowledge that many youth feel they are becoming adults, but to differentiate between those over twenty and youth under the age of twenty. The second variable, labelled empathy, measures a generalized view of adults as being more or less capable of understanding the life style and needs of youth.

Analysis of covariance with all variables entered simultaneously was used to test whether the variables used in the core model would show significant relationships to average scores on the two dependent variables. Analysis was sequenced in three stages to correspond to the population of students grouped according to whether they had had experience in a work setting for three months or more or had been in a work experience program for three months or more. The three stages are (1) total sample, (2) youth with work experience, and (3) youth with program and work experience.

For the total sample the major settings in which youth participate are home, classroom, school activities, and other activities. Youth with work experience participate in the additional setting of the workplace. Program students participate in two additional settings, program and work. For the work experience sample, the number of jobs held and links to work settings are additional variables. Links through the program

are added as independent variables for the last sample, those with both work and program experience. Stages of the analysis correspond to the parts of the questionnaire as shown in figure 3. All respondents completed parts I and II; those with work experience completed parts I, II, and III; and finally those with program experience completed parts I, II, III, and IV. With each stage of analysis there are fewer respondents in the sample. For this reason, the basic model required modification in the third stage of analysis in order to maintain adequate cell size for each variable.

FIGURE 3: Items Completed by Response Groups

		Questionnaire Sections			
		I Background Information	II Communication & Empathy Scales	III Work Experience	IV Program Experience
Group	N				
Total Sample	320	x	x		
Work Experience	261	x	x	x	
Program Experience	113	x	x	x	x

x = sections of questionnaire completed

To create the core model it was necessary to chose between the variables grade level and age. The grade level of a respondent (eleventh or twelfth) and age (that ranged from fifteen to eighteen or older) are closely related. To use both in the model was statistically difficult. We selected grade level as the variable, in order to remain consistent with the findings, and discussion from the first year of the study. In that report (Coleman et al., 1980) grade level was a significant predictor of scores, and we concluded that it could be interpreted as the number of years of successful experience within the environment of the school (promotion from grade to grade). Therefore, we wanted to determine whether grade level would be predictive in this second year. We anticipated possible differences inasmuch as we surveyed sophmores, juniors, and seniors in the first year, and juniors and seniors only, the second.

We proposed three hypotheses which are adaptations of hypotheses presented by Dr. Bronfenbrenner. These were used to establish relationships between variables that would suggest how to better link home, school, and work for assisting youth in leaving school and entering the environment of work. The three hypotheses were as follows:

Hypothesis There is a significant and positive relationship between participation in multiple settings and the dependent measures, empathy and communication.

Hypothesis There is a significant and positive relationship between the number of support links for youth participating in work settings and scores on the dependent measures, empathy and communication.

Hypothesis There is a significant and positive relationship between the number of transition links among home and work, home and program, school and work, and school and program.

At each stage of the analysis we tested the model in relation to each of the dependent measures, communication and empathy. The findings showed that communication and empathy relates differently to the variables in the model, resulting in different patterns in the ecological environment of youth. Therefore in presenting the findings we will discuss the relationship of the model to communication for each of the three groups and then to empathy for the three groups.

For both the dependent variables, empathy and communication, the core model includes all background characteristics and other factors we described in the conceptual model and all two-way interactions between category or nominal level variables.

Communication

Total Sample. Our basic model (see table 6) of background characteristics and multisetting participation suggests factors which contribute to scores on the dependent variable communication. Accounting for 25 percent (R^2=.25) of the variance and being significant at the 0.01 level, the model suggests that students' personal characteristics, family environment, and participation in different settings where adults are present do contribute to the sense of ease or comfort youth feel in communicating with older adults. Also, several interactions and GPA are significant

predictors of scores on the communication variable. A brief discussion of each of the independent variables significant at or below the 0.05 level follows.

The first interaction that appears in the model, significant at the 0.01 level, is observed between the variables group and the persons with whom youth live. From the interaction presented in figure 4 and the details in table 7, it would appear that for youth who live with both a mother and father in the home, the addition of new environments, work and program, corresponds to increasing scores on communication. On the other hand, youth not living with both parents have higher scores if they are either not working or are working with the benefit of a program. Those who work and do not live with both parents have lower scores. The biggest difference in scores occurs between "mother and father" and "other" for the "no work, no program" group.

Figure 5 displays the interaction between group and participation by youth in other activities and table 8 gives details of the interaction. Significant at the 0.01 level, this interaction suggests that for youth who do not participate in community activities, in sports, or in music and church groups, the work environment makes a definite additive contribution to their scores. This observation is tempered, however, by the small number of respondents in this category. On the other hand, of the youth who participate in extracurricular activities beyond school those who are also in work environments score somewhat lower than those not having this experience. Of the youth who are participating in other activities there is little difference between those who have work experience and those who have both work and program experience.

The interaction of group and parent employed, for communication score, figure 6, and table 9 suggests that for our sample of youth who live in a household where the mother or another guardian are the breadwinners, those who are in programs had the highest scores and those with no experience had the lowest. Of youth whose father is employed or whose fathers and mothers both are employed, those who work have lower scores than either those not working or those in a program. This interaction was significant at the 0.01 level.

Figure 7 and table 10, which give the interaction between sex and race, for communication scores shows that for whites, males were lower than females; but for blacks, males were higher than females. Of all groups, white males had the lowest scores.

Looking at the interaction of sex and parent employed, for communication scores, figure 8 and table 11, we observe a greater range in scores for males according to parent employed than for

TABLE 6: Analysis of Covariance, Communication Scale-- Total Sample

Source	df	Mean Square	F value	PR > F (level of significance)
Group	2	0.74826210	2.39	0.0932
Sex	1	0.23014953	0.74	0.3916
Race	1	0.00008479	0.00	0.9869
Grade	1	0.44833521	1.43	0.2321
Live With	1	0.87938703	2.81	0.0946
School Activities	1	0.26303511	0.84	0.3598
Other Activities	1	0.08794917	0.28	0.5962
Parent Employed	2	0.33907814	1.09	0.3394
Group by Sex	2	0.36961792	1.18	0.3081
Group by Race	2	0.51189719	1.64	0.1964
Group by Grade	2	0.24624916	0.79	0.4558
Group by Live With	2	1.77052377	5.67	0.0039
Group by School Activities	2	0.20132134	0.64	0.5259
Group by Other Activities	2	1.30604804	4.18	0.0163
Group by Parent Employed	4	1.16884540	3.74	0.0056
Sex by Race	1	1.54231312	4.94	0.0272
Sex by Grade	1	0.26361768	0.84	0.3592
Sex by Live With	1	0.07233016	0.23	0.6309
Sex by School Activities	1	0.15337928	0.49	0.4842
Sex by Other Activities	1	0.16558791	0.53	0.4673
Sex by Parent Employed	2	1.20337303	3.85	0.0225
Race by Grade	1	0.12803230	0.41	0.5227
Race by Live With	1	0.00077923	0.00	0.9602
Race by School Activities	1	0.93267829	2.98	0.0852
Race by Other Activities	1	0.00047802	0.00	0.9688
Race by Parent Employed	2	0.14851451	0.48	0.6223
Grade by Live With	1	0.08171702	0.26	0.6095
Grade by School Activities	1	0.08838991	0.28	0.5953
Grade by Other Activities	1	0.14028953	0.45	0.5034
Grade by Parent Employed	2	0.21698394	0.69	0.5003
Live With by School Activities	1	0.03627807	0.12	0.7336
Live With by Other Activities	1	0.42672066	1.37	0.2437
Live With by Parent Employed	2	0.15779310	0.50	0.6041
School Activities by Other Activities	1	1.70329221	5.45	0.0203
School Activities by Parent Employed	2	0.64531498	2.06	0.1289
Other Activities by Parent Employed	2	0.02045525	0.07	0.9367
GPA	1	4.29395470	13.74	0.0003
GPA Squared	1	4.72676493	15.13	0.0001

FIGURE 4: Interaction of Group, Who Youth Live With, and Communication Scores--Total Sample

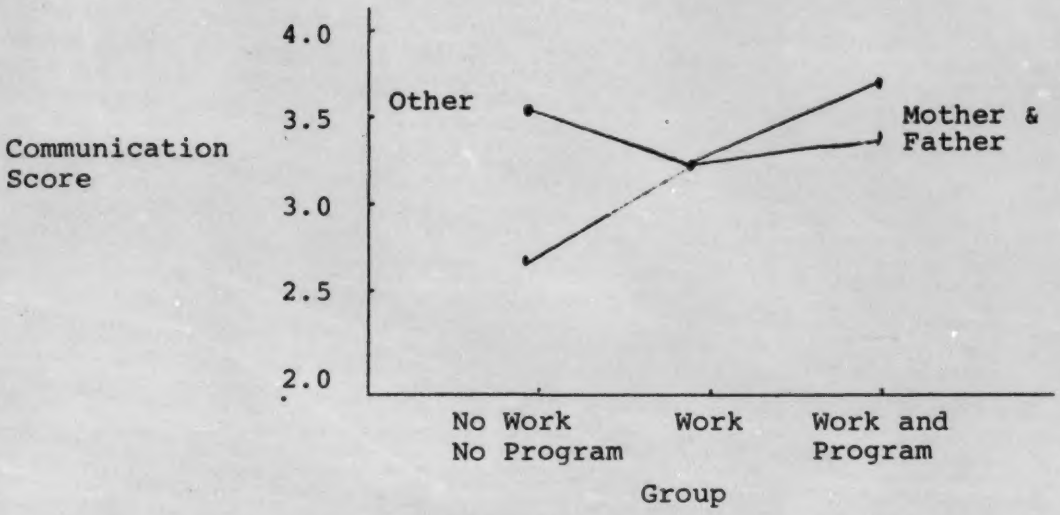


TABLE 7: Least Squares Means and Standard Error of Communication Scores by Group and Who Youth Live With--Total Sample

Group by Setting Experience	Who Youth Live With	N	L.S. Mean Communication	Standard Error L.S. Mean
No Work, No Program	Mother & Father	45	2.66	0.19
	Other*	12	3.55	0.30
Work	Mother & Father	118	3.03	0.18
	Other	30	3.05	0.19
Work and Program	Mother & Father	84	3.39	0.15
	Other	28	3.70	0.31

* Other refers to mother only, father only, or a guardian

FIGURE 5: Interaction of Group, Participation in Other Activities, and Communication Scores--Total Sample

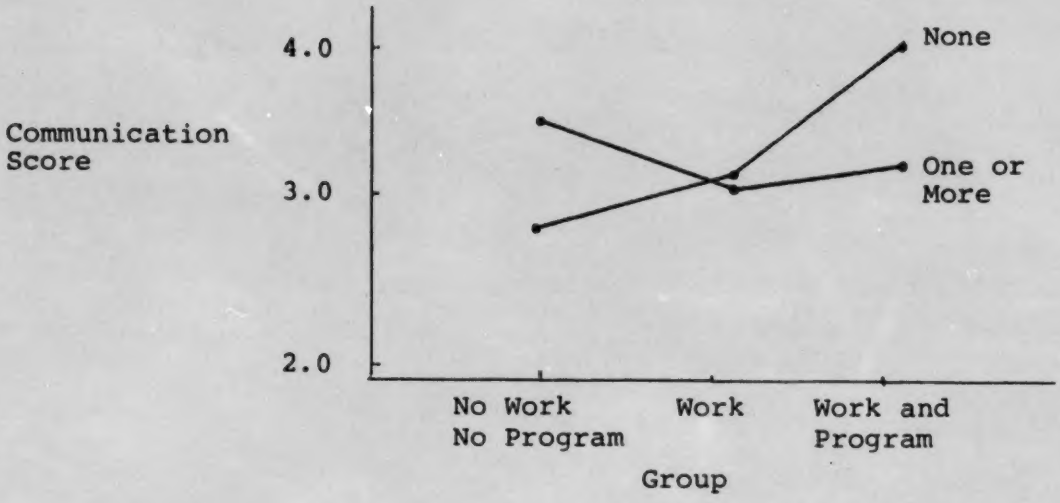


TABLE 8: Least Squares Means and Standard Error of Communication Scores by Group and Participation in Other Activities--Total Sample

Group	Other Activities	N	L.S. Mean Communication	Standard Error L.S. Mean
No Work, No Program	None	5	2.78	0.36
	One or More	52	3.43	0.20
Work	None	11	3.07	0.25
	One or More	137	3.01	0.11
Work and Program	None	6	4.01	0.36
	One or More	106	3.08	0.11

FIGURE 6: Interaction of Group, Parent Employed, and Communication Scores--Total Sample

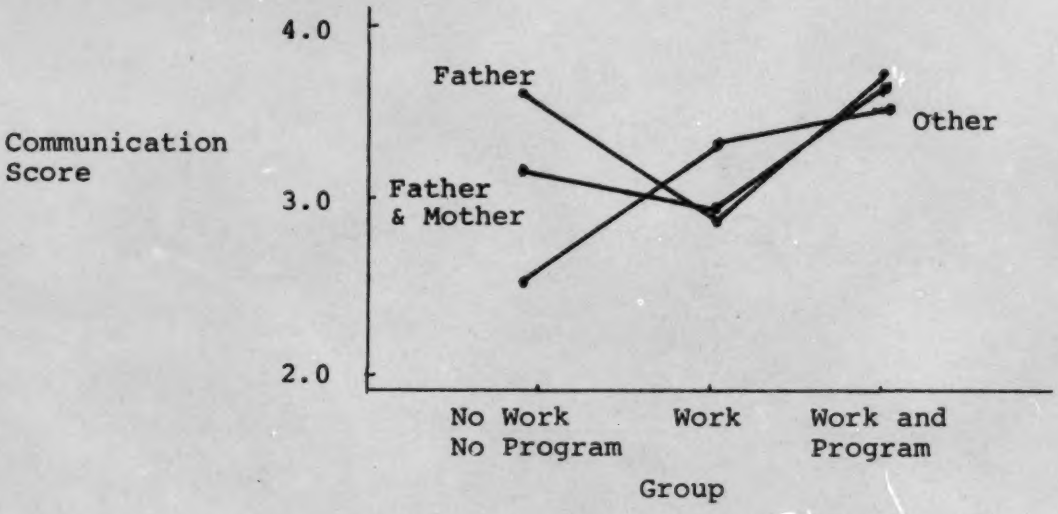


TABLE 9: Least Squares Means and Standard Error of Communication Scores by Group and Parent Employed--Total Sample

Group	Parent Employed	N	L.S. Mean Communication	Standard Error L.S. Mean
No Work, No Program	Other*	11	2.49	0.28
	Father	25	3.58	0.28
	Father & Mother	21	3.25	0.32
Work	Other	28	3.23	0.15
	Father	48	2.93	0.23
	Father & Mother	72	2.95	0.28
Work and Program	Other	23	3.42	0.24
	Father	33	3.61	0.28
	Father & Mother	56	3.60	0.26

* Other refers to mother or other person

FIGURE 7: Interaction of Sex, Race, and Communication Scores-- Total Sample

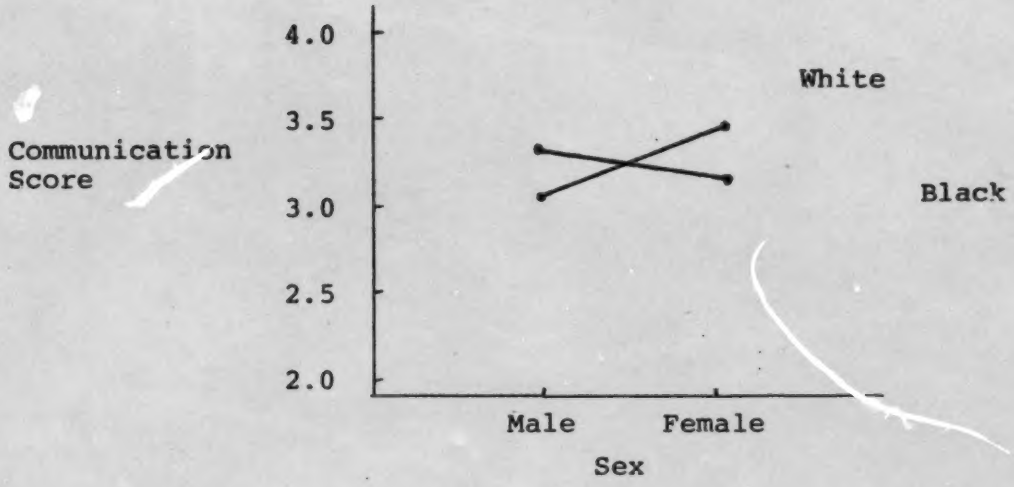


TABLE 10: Least Squares Means and Standard Error of Communication Scores by Sex and Race-- Total Sample

Sex	Race	N	L.S. Mean Communication	Standard Error L.S. Mean
Male	White	119	3.03	0.21
	Black	32	3.29	0.18
Female	White	126	3.43	0.16
	Black	40	3.18	0.21

FIGURE 8: Interaction of Sex, Parent Employed, and Communication Scores--Total Sample

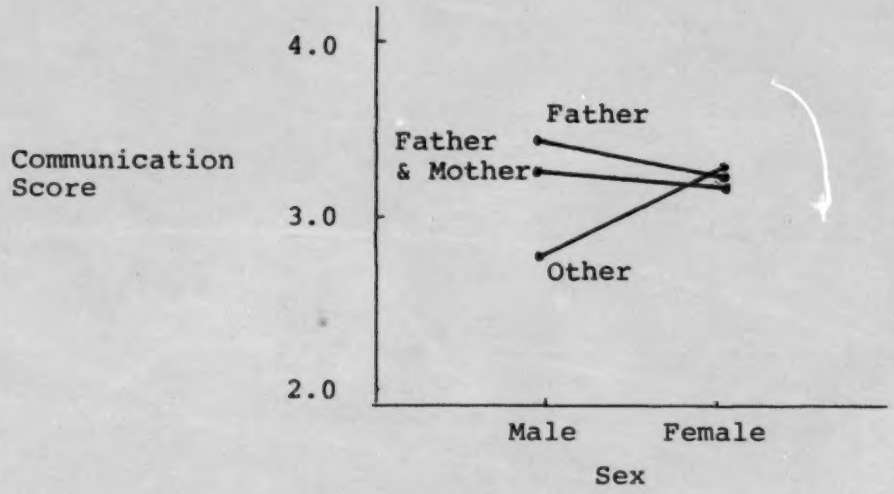


TABLE 11: Least Squares Means and Standard Error of Communication Scores by Sex and Parent Employed--Total Sample

Sex	Parent Employed	N	L.S. Mean Communication	Standard Error L.S. Mean
Male	Other*	24	2.75	0.22
	Father	60	3.44	0.22
	Father & Mother	67	3.28	0.26
Female	Other	38	3.35	0.15
	Father	46	3.31	0.24
	Father & Mother	82	3.26	0.25

* Other refers to mother or other person

FIGURE 9: Interaction of Participation in School Activities, Other Activities, and Communication Scores-- Total Sample

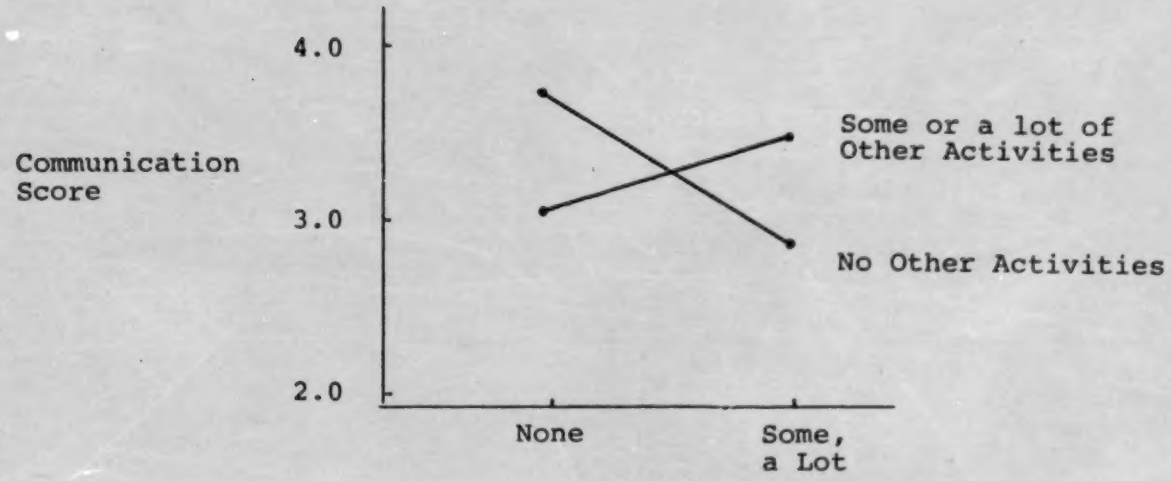


TABLE 12: Least Squares Means and Standard Error of Communication Scores by Participation in School and Other Activities-- Total Sample

Participation in School Activities	Participation in Other Activities	N	L.S. Mean Communication	Standard Error L.S. Mean
None	None	13	3.60	0.24
	Some, a Lot	34	3.05	0.15
Some	None	9	2.98	0.31
	Some, a Lot	261	3.29	0.07

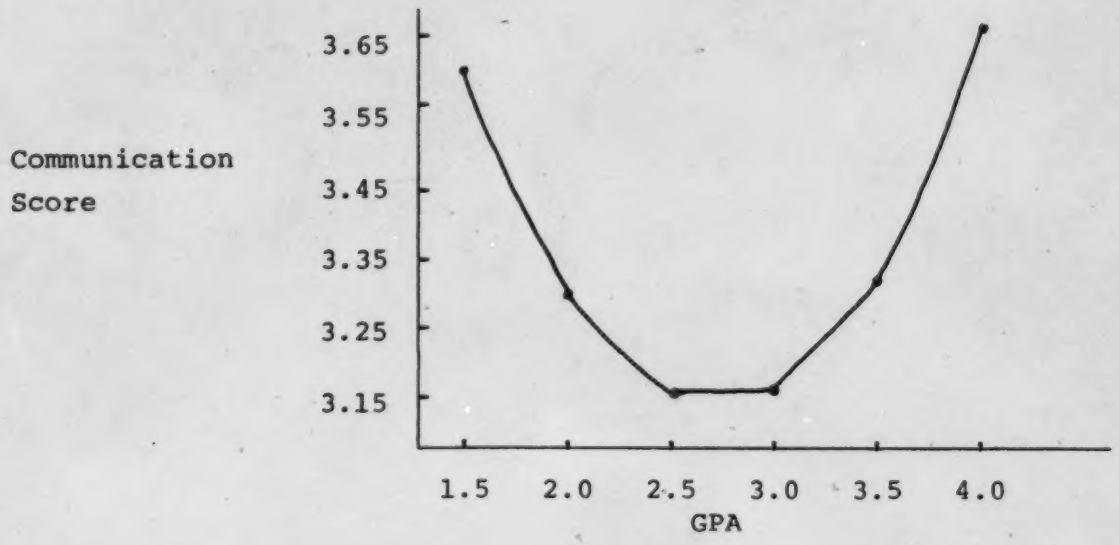
females. Males who scored the highest live in households where the father works; next are males whose mother and father both work and lowest are males whose mothers are the family workers. It is likely that most of the latter are families where the mother is the head of the household. Noticeably, the group "other" corresponds to the lowest score for males but highest for females.

The final interaction, shown in figure 9 and table 12, occurs between participation in school activities and participation in activities related to school as well as music, church, and other community activities. Significant at the 0.02 level this interaction suggests that the highest communication scores are by those who do not participate in any activities, either in school or in the community. The lowest scores are associated with those who participate in school activities but not in other activities. The high score for the no participation group appears puzzling. However, considering the small number of respondents for the "no participation in other activities" categories, the best conclusion may be that there is a need for further research.

Figure 10 shows that there is a significant (0.01) relationship between GPA and communication. This is a curvilinear relationship explained by the formula:

$$\text{Predicted Communication Score} = 5.44 + (-1.7 * \text{GPA}) + (0.313 * \text{GPA}^2)$$

FIGURE 10: Relationship between Communication Score and GPA--Total Sample



Youth with a GPA of 2.0 or lower, or 3.5 or higher, have the highest communication scores; those with 2.5-3.0 have the lowest.

Work Experience. In the second stage of analysis we used the same basic model of personal background characteristics and multisetting participation and added three variables to account for participation in work settings (1) number of jobs, (2) support links, and (3) transition links. These variables represent the number of different jobs a respondent reported having held, the number of support links present, and the number of transition links present.

We will be referring to these links throughout the rest of the analysis. As noted earlier support links-3 and transition links-3 come from part III of the questionnaire, which was answered by both work experience and program students. These questions deal with links to the work setting. Support links-4 and transition links-4 come from part IV of the questionnaire and were answered by program students only. These questions deal with links provided by the program. See figure 1, page 14 in the previous section for a listing of these items.

Before looking at the analysis of support links and transition links a comment on the limitation of these variables in the model is in order. As quantified from the questionnaire items each variable has a limited range. The possible range of responses are: support links-3 (0-7), transition links-3 (0-5); support links-4 (0-4); and transition links-4 (0-4). One reviewer's comment was that the impact of the limited range may be to understate any relationships which may exist if a fuller range of response in the variable would be brought into the analysis. Also, as previously discussed in the description of the program, we found that in the programs there was no intentional linking of home, school and work as defined by this study. Taking these observations into account it is reasonable to suggest that any relationships which these data show may underestimate the potential influence of the variables support links and transition links.

The communication model for the work experience group was significant at the 0.01 level and accounted for twenty-eight percent of the variance in the scores for youth with work experience, as shown in table 13. It would appear that, as with the total sample, the model does account for a portion of the variation in this measure.

Another similarity to the analysis for the total group is that there are several interactions which merit attention; GPA is again significant as an independent variable and support links do relate to scores on the dependent variable. These will be discussed later.

The interaction in figure 11 shows that, as with the total sample, race interacts significantly with sex (0.03) for scores on the communication scale. Race does not appear significant for males. White females indicate the greatest ease of all groups in communicating with older adults. Table 14 provides details of the interaction.

Females in the work sample also respond differently according to which parent is employed. This interaction is demonstrated in figure 12, with details provided in table 15. Young women who live in a household in which the mother or other guardian is the employed person scored most positively, while females in homes where the father is the head of the household have the lowest scores. Again, the category "other" corresponds to the lowest scores for males but the highest scores for females.

Figure 13 shows the interaction of participation in school activities and participation in other activities, with table 16 providing details of the interaction. As with the total sample, we observe an intriguing crisscross in which the high scores on communication correspond to those who do not participate in either school or other activities, followed by those who participate in both school and other activities. Because of only 9 respondents in the first category and 213 in the latter, one may be more confident in noting that participation in school and other activities relates to fairly positive scores on communication. One might wonder whether the low scores for those who do not participate in school activities but do participate in some other activities represent youth who need a special setting such as a music group to be involved with peers and adults.

GPA (0.01) and support links-3 (0.01) have significant relationships with scores on the communication scale, as shown in figure 14. Again, the relationship between GPA and communication is curvilinear with higher scores corresponding to a GPA of 2.0 or lower and of 3.5 or higher. GPA of a 2.5 to 3.0 corresponds to lower scores. This relationship which describes the average relationship between the variables, assuming an adjustment for other major influences, as described by the following formula:

$$\text{Predicted Communication Score} = 6.166 + (-2.164 * \text{GPA}) + (0.381 * \text{GPA}^2)$$

Figure 15 shows the average relationship between support links-3 and communication scores, adjusting for other influences. It appears that for workers there is a linear and positive relationship between the number of support links and the scores on the communication scales or the perceived ease or comfort in

TABLE 13: Analysis of Covariance, Communication Scale, Work Experience

Source	df	Mean Square	F value	PR > F (level of significance)
Group	1	0.50513671	1.68	0.1960
Sex	1	0.10371917	0.35	0.5573
Race	1	0.11473107	0.38	0.5371
Grade	1	0.61114314	2.04	0.1551
Live With	1	0.04239907	0.14	0.7074
School Activities	1	0.10584762	0.35	0.5533
Other Activities	1	1.19678498	3.99	0.0471
Parent Employed	2	0.27902512	0.46	0.6289
Group by Sex	1	0.00727488	0.02	0.8764
Group by Race	1	0.53559017	1.78	0.1831
Group by Grade	1	0.00278308	0.01	0.9234
Group by Live With	1	0.29413953	0.98	0.3233
Group by School Activities	1	0.07474240	0.25	0.6183
Group by Other Activites	1	0.60957538	2.03	0.1556
Group by Parent Employed	2	0.59457142	1.98	0.1405
Sex by Race	1	1.48656648	4.95	0.0271
Sex by Grade	1	0.71975835	2.40	0.1230
Sex by Live With	1	0.36786038	1.23	0.2695
Sex by School Activities	1	0.05567806	0.19	0.6671
Sex by Other Activities	1	0.09652433	0.32	0.5713
Sex by Parent Employed	2	0.86277614	2.87	0.0587
Race by Grade	1	0.34368256	1.15	0.2858
Race by Live With	1	0.01836195	0.06	0.8049
Race by School Activites	1	0.52670251	1.75	0.1867
Race by Other Activities	1	0.01952042	0.07	0.7990
Race by Parent Employed	2	0.03327011	0.11	0.8951
Grade by Live With	1	0.00087650	0.00	0.9570
Grade by School Activities	1	0.03211690	0.11	0.7439
Grade by Other Activities	1	0.01767494	0.06	0.8085
Grade by Parent Employed	2	0.11793256	0.39	0.6756
Live With by School Activities	1	0.15160839	0.51	0.4781
Live With by Other Activities	1	0.00372195	0.01	0.9114
Live With by Parent Employed	2	0.02623124	0.09	0.9164
School Activities by Other Activities	1	3.03301152	10.10	0.0017
School Activities by Parent Employed	2	0.45991836	1.53	0.2185
Other Activities by Parent Employed	2	0.17726757	0.59	0.5549
Number of Jobs	1	0.03046847	0.10	0.7503
GPA	1	5.15872532	17.19	0.0001
GPA Square	1	5.17233919	17.23	0.0001
Support Links	1	3.19071555	10.63	0.0013
Transition Links	1	0.49970376	1.66	0.1984
Error	210	0.30015712	-----	------

FIGURE 11: Interaction of Sex, Race, and Communication Scores, Work Experience

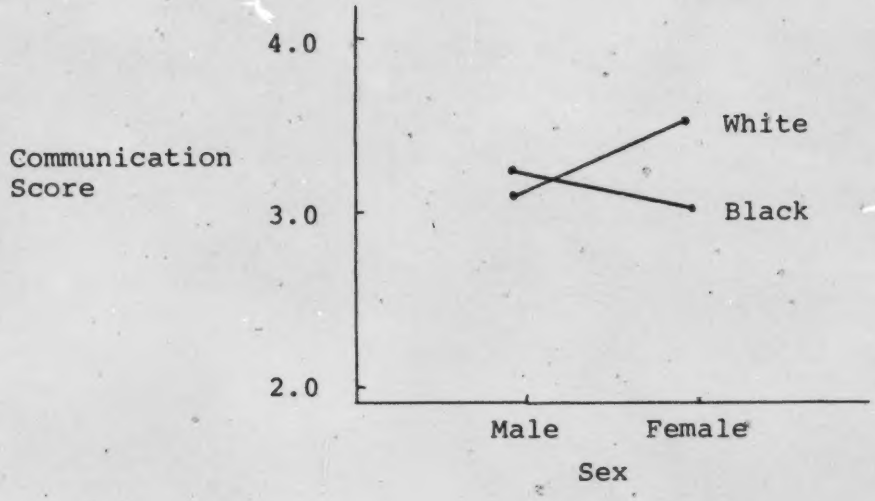


TABLE 14: Least Squares Means and Standard Error of Communication Scores by Sex and Race, Work Experience

Sex	Race	N	L.S. Mean Communication	Standard Error L.S. Mean
Male	White	103	3.13	0.21
	Black	24	3.25	0.22
Female	White	97	3.51	0.19
	Black	36	3.09	0.21

FIGURE 12: Interaction of Sex and Parent Employed for Communication Scores, Work Experience

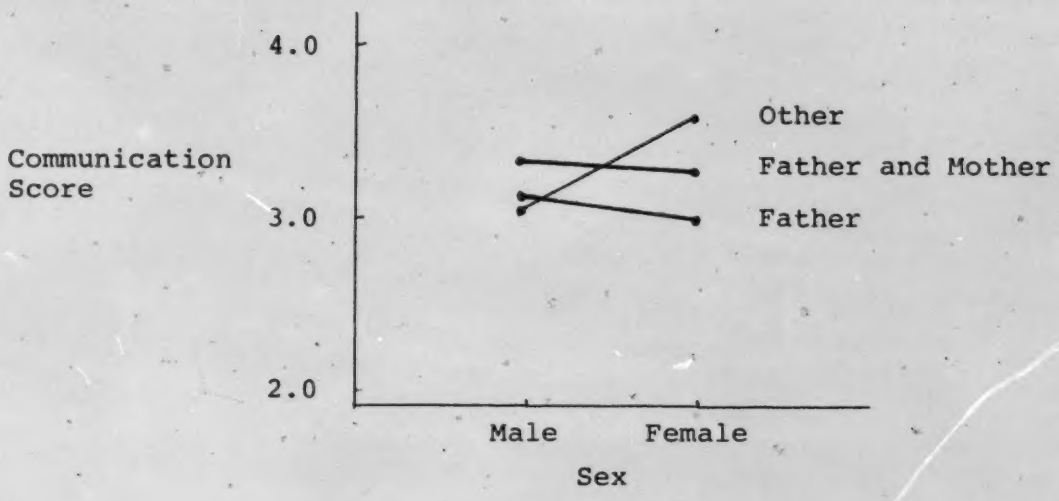


TABLE 15: Least Squares Means and Standard Error of Communication Scores by Sex and Parent Employed, Work Experience

Sex	Parent Employed	N	L.S. Mean Communication	Standard Error L.S. Mean
Male	Other*	19	3.05	0.24
	Father	48	3.15	0.27
	Father & Mother	60	3.36	0.29
Female	Other	32	3.58	0.20
	Father	33	3.00	0.27
	Father & Mother	68	3.30	0.30

* Other refers to mother or a single guardian

FIGURE 13: Interaction of Participation in School Activities, Other Activities, and Communication Scores, Work Experience

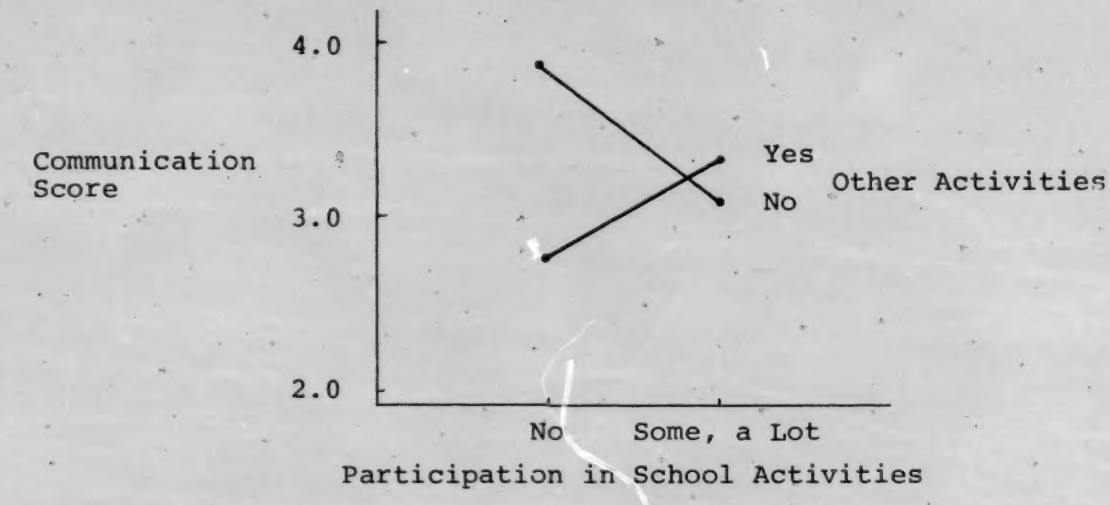
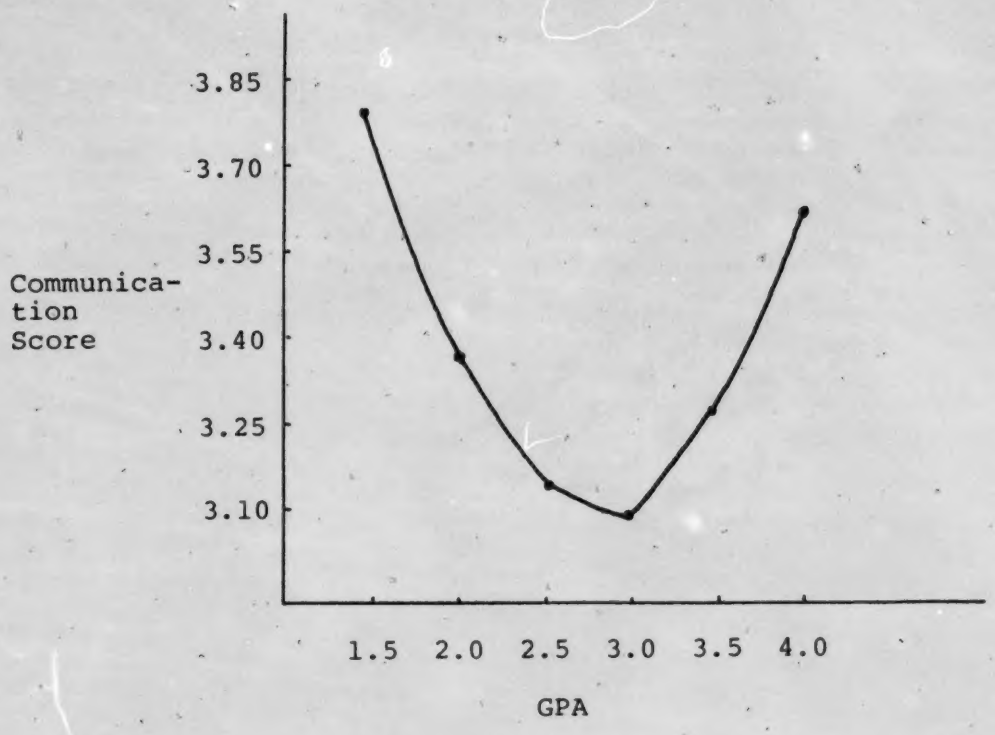


TABLE 16: Least Squares Means and Standard Error of Communication Scores By Participation in School and Other Activities, Work Experience

Participation in School Activities	Participation in Other Activities	N	Communication L.S. Mean	Standard Error L.S. Mean
No	No	9	3.87	0.28
	Yes	30	2.74	0.14
Some, a Lot	No	8	3.08	0.32
	Yes	213	3.28	0.09

FIGURE 14: Relationship between Communication Score and GPA, Work Experience



communicating with older adults. This relationship is expressed by the following formula:

Predicted Communication Score = 2.924 + (0.0604 * SLINKS-3)

Programs. The third stage of analysis was for those youth who have had both experience in a program which uses a work setting as a learning environment and in independent work experience. As described in chapter II, the programs in which youth can participate are experience-based career education, vocational office training, distributive education, CETA summer youth corps and a group of programs placed in a category called "other." A total of 113 respondents are in the program sample for the analysis. These youths completed the entire questionnaire, parts I through IV.

In order to adjust for fewer respondents in each cell in the analysis of covariance, inadequate cell size made it necessary to drop the independent variable other activities. Two additional variables, support links-4 (for part 4 of the questionnaire) and transition links-4, were added.

The analysis of covariance model for the communication scale, modified to include part IV responses was significant at the 0.068 level and accounted for forty-two percent of the variation in scores (table 17). Two interactions in relation to communication scores are significant (1) sex by grade (0.02), and (2) participation in school activities by parent employed (0.02). GPA, support links-3 (0.01), supports links-4 (0.04), and transition links-4 (0.01) are all significant as independent variables.

Figure 16 shows the first interaction between sex and grade, for communication scores and table 18 provides details of the interaction. We see that males in the twelfth grade have an average score which is almost 0.5 higher than those in the eleventh grade. For females there is less difference according to grade level. However, relationship between sex and grade level is reversed with females in the eleventh grade having higher scores than those in the twelfth.

Figure 17 shows the interaction between participation in school activities and parent employment for communication scores. Table 19 provides details of the interaction. Program youth who do not participate in school activities and who live in a household where the father is the employed parent have the highest scores. Youth who live in a household where the mother or a guardian is employed appear to benefit from participation in activities.

Again, GPA is significant as an independent variable in predicting scores on the communication scale. Figure 18 shows that the relationship between GPA and communication scores

FIGURE 15: Relationship between Communication Score and Number of Support Links-3, Work Experience

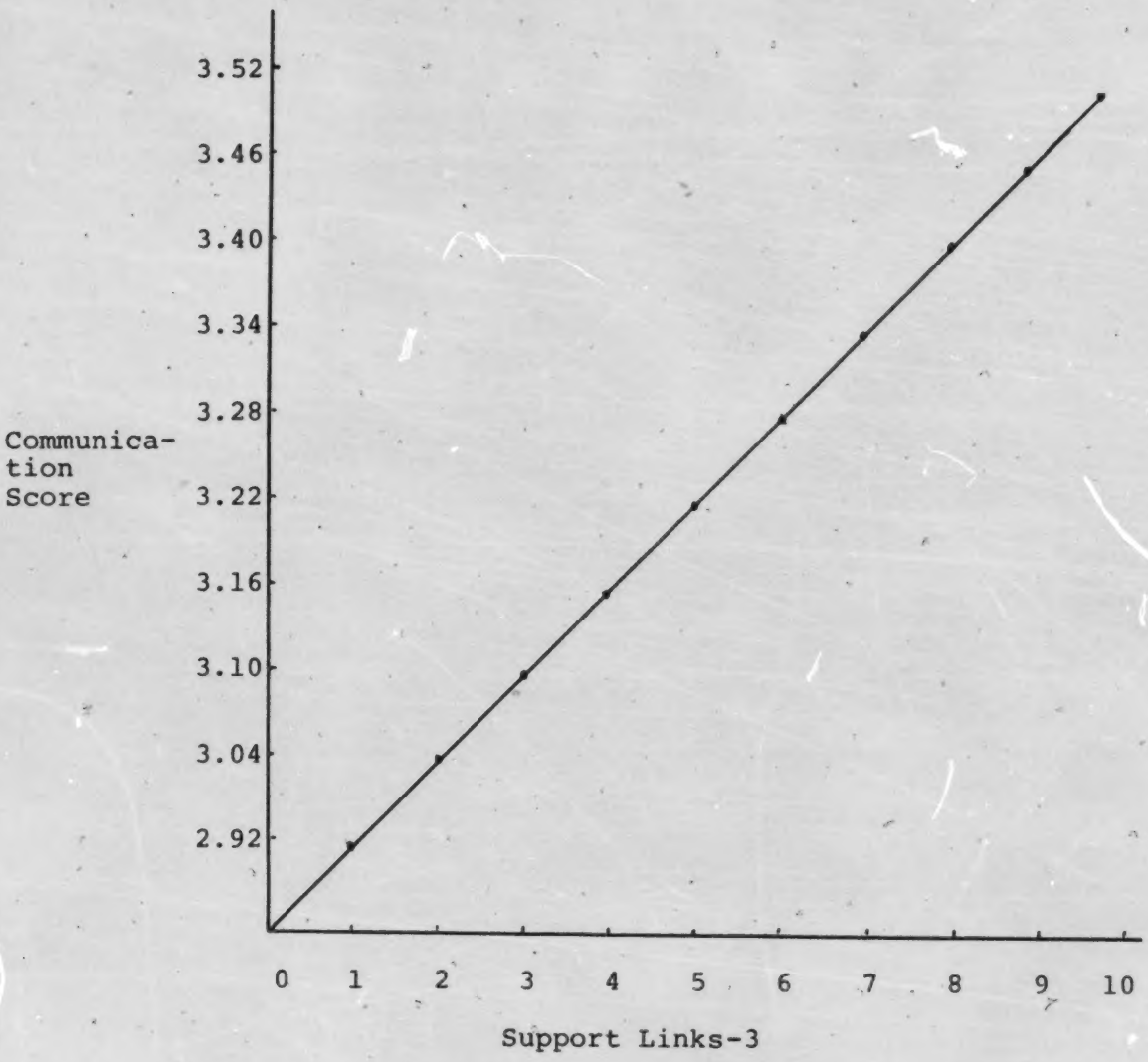


TABLE 17: Analysis of Covariance, Communication Scale, Programs

Source	df	Mean Square	F value	PR > F (level of significance)
Sex	1	0.00730393	0.03	0.8736
Race	1	0.16027652	0.56	0.4568
Grade	1	0.37815875	1.32	0.2543
Live With	1	0.28530268	1.00	0.3215
School Activities	1	1.57289388	5.49	0.0218
Parent Employed	2	0.09329225	0.33	0.7231
Sex by Race	1	0.29827447	1.04	0.3108
Sex by Grade	1	2.41881465	8.44	0.0048
Sex by Live With	1	0.03530974	0.12	0.7265
Sex by School Activities	1	0.46492316	1.62	0.2066
Sex by Parent Employed	2	0.64525089	2.25	0.1122
Race by Grade	1	0.25022361	0.87	0.3530
Race by Live With	1	0.57191043	2.00	0.1618
Race by School Activities	1	0.03538501	0.12	0.7262
Race by Parent Employed	2	0.04967315	0.17	0.8412
Grade by Live With	1	0.00043672	0.00	0.9690
Grade by School Activities	1	0.01433304	0.05	0.8236
Grade by Parent Employed	2	0.13504774	0.47	0.6260
Live With by School Activities	1	0.57301604	2.00	0.1614
Live With by Family Work	2	0.12413383	0.43	0.6500
School Activities by Parent Employed	2	1.16287030	4.06	0.0212
GPA	1	1.50362879	5.25	0.0248
GPA Squared	1	1.35158629	4.72	0.0330
Support Links-3	1	1.85164609	6.46	0.0131
Transition Links-3	1	0.29755116	1.04	0.3114
Support Links-4	1	1.27218214	4.44	0.0384
Support Links-4 Squared	1	1.32410215	4.62	0.0348
Transition Links-4	1	1.82922348	6.38	0.0136
Transition Links-4 Squared	1	1.45660783	5.08	0.0271
Number of Jobs	1	0.17916167	0.63	0.4316
Error	75	0.28650315	--	--

FIGURE 16: Interaction of Sex, Grade, and Communication Scores, Programs

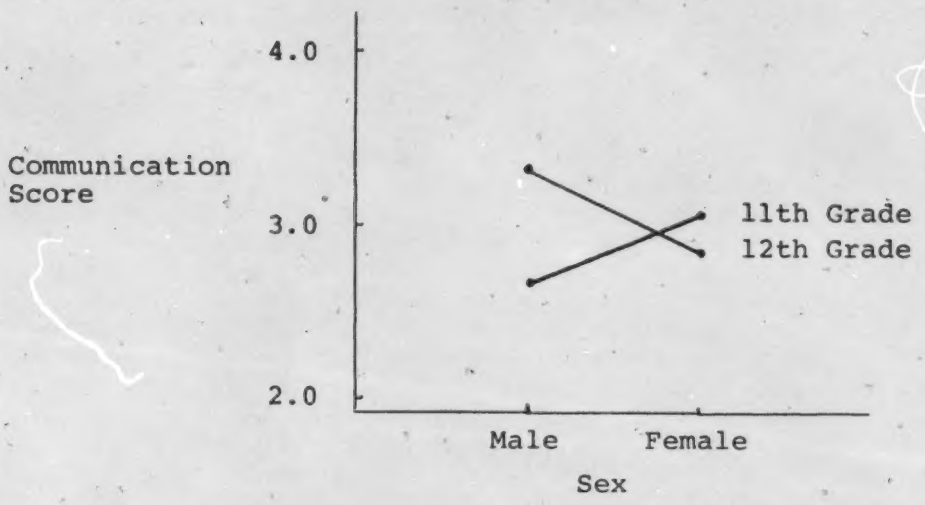


TABLE 18: Least Squares Means and Standard Error of Communication Scores by Sex and Grade, Programs

Sex	Grade	N	L.S. Mean Communication	Standard Error L.S. Mean
Male	11	19	2.68	0.31
	12	30	3.28	0.25
Female	11	24	3.02	0.24
	12	39	2.88	0.21

follows the same pattern observed in both the total sample and work experience. That is, if we were looking at a student with a GPA of 2.5 to 3.0, and other factors were at an average level, we would predict a relatively low score on the communication scale. This relationship is expressed by the following formula:

$$\text{Predicted Communication Score} = 6.351 + (-2.3635 * \text{GPA} + (0.4320 * \text{GPA}^2)$$

Support links-3, support links-4, and transition links-4 all were significant as predictors of communication scores. Only transition links-3 was not significant. Shown in figures 18, 19 and 20 we see that the items categorized as support links-3, i.e., discussions about work with friends or family members and other items measuring support of work experience, have a favorable influence. However, fewer than three support links taken from and related to questionnaire part IV, program participation, correspond to lower scores, while four or more correspond to higher scores on communication. The pattern is reversed in terms of the average relationship between transition links and communication scores. Here, one link or two links correspond to increased scores; three or more correspond to lower scores.

Interpretation of these relationships required looking at the questionnaire items in an attempt to understand what is observed. It is important that those variables identified as links are significant in predicting a score in a variable such as communication. There are many possible explanations for these patterns. First, this questionnaire represents the first attempt to convert a concept to specific items and then to apply mathematical procedures to evaluate them. A review of the items, using hindsight, suggests that part IV of the questionnaire may make it possible to identify youth for whom special efforts are necessary to enable them to participate in a work environment. The actual presence of several links may indicate youth who would have much lower initial scores. Clearly, further research is required to improve the items used and our insight in interpreting the results.

The formulas depicting the relationship between links and communication scores are as follows:

$$\text{Predicted Communication Score} = 2.856 + (0.7415 * \text{SLINKS3})$$
$$= 3.404 + (-0.3640 * \text{SLINKS4}) + (0.0870 * \text{SLINKS4}^2)$$

$$\text{Predicted Communication Score} = 3.025 + (0.5257 * \text{TLINKS4}) + (-0.1583 * \text{TLINKS4}^2)$$

FIGURE 17: Interaction of Participation in School Activities, Parent Employed, and Communication Scores, Programs

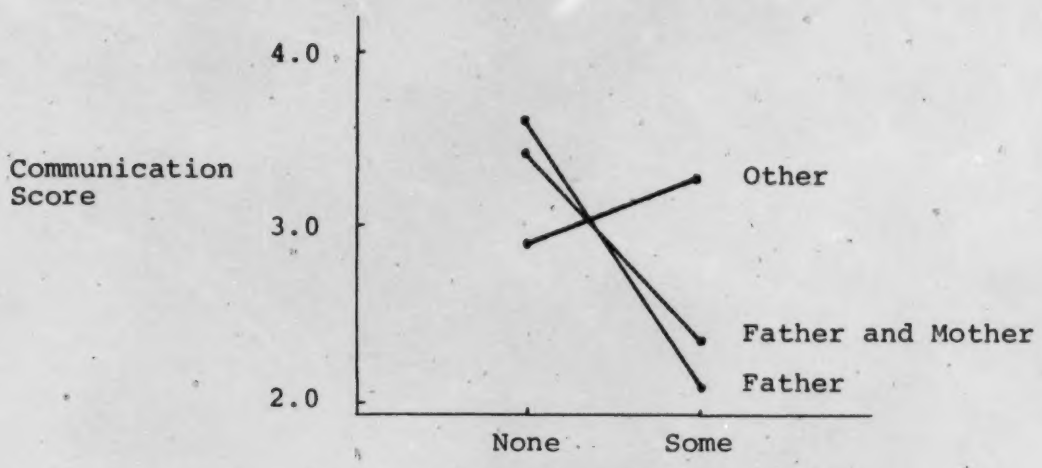


TABLE 19: Least Squares Means and Standard Error of Communication Scores by Participation in School Activities and Parent Employed, Programs

Participation in School Activities	Parents Employed	N	L.S. Mean Communication	Standard Error L.S. Mean
None	Other*	7	2.93	0.32
	Father	5	3.62	0.63
	Father & Mother	6	3.45	0.42
Some	Other	16	3.30	0.17
	Father	28	2.14	0.44
	Father & Mother	30	2.34	0.12

* Other refers to mother only, a single guardian, or spouse

FIGURE 18: Relationship between Communication Score and GPA, Programs

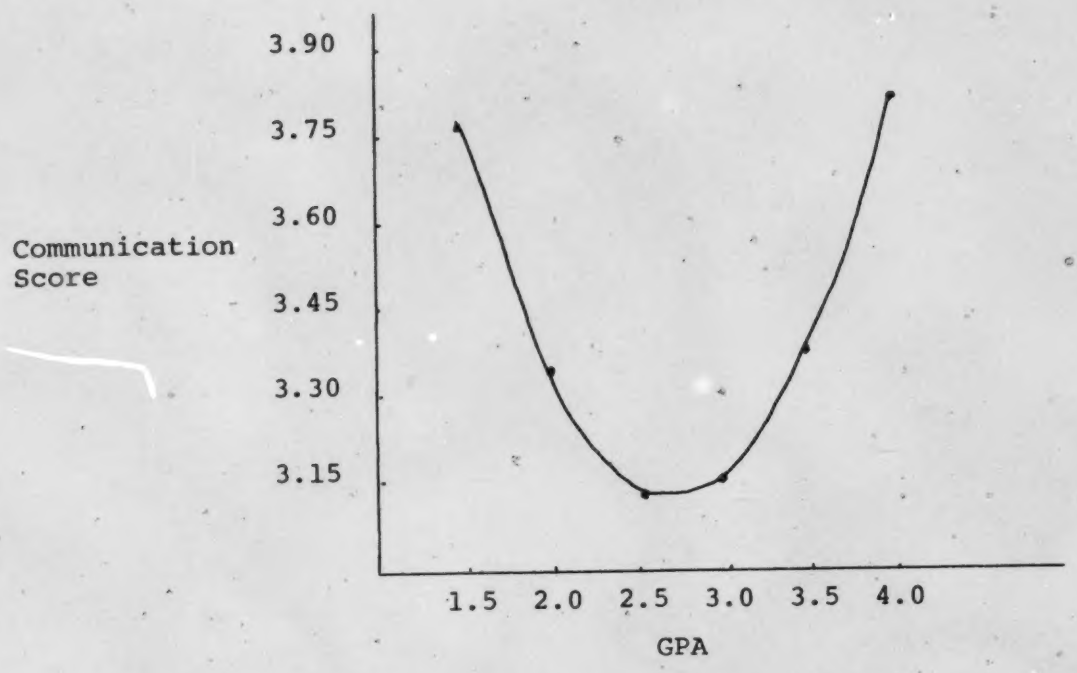


FIGURE 19: Relationship between Communication Score and Support Links-3, Programs

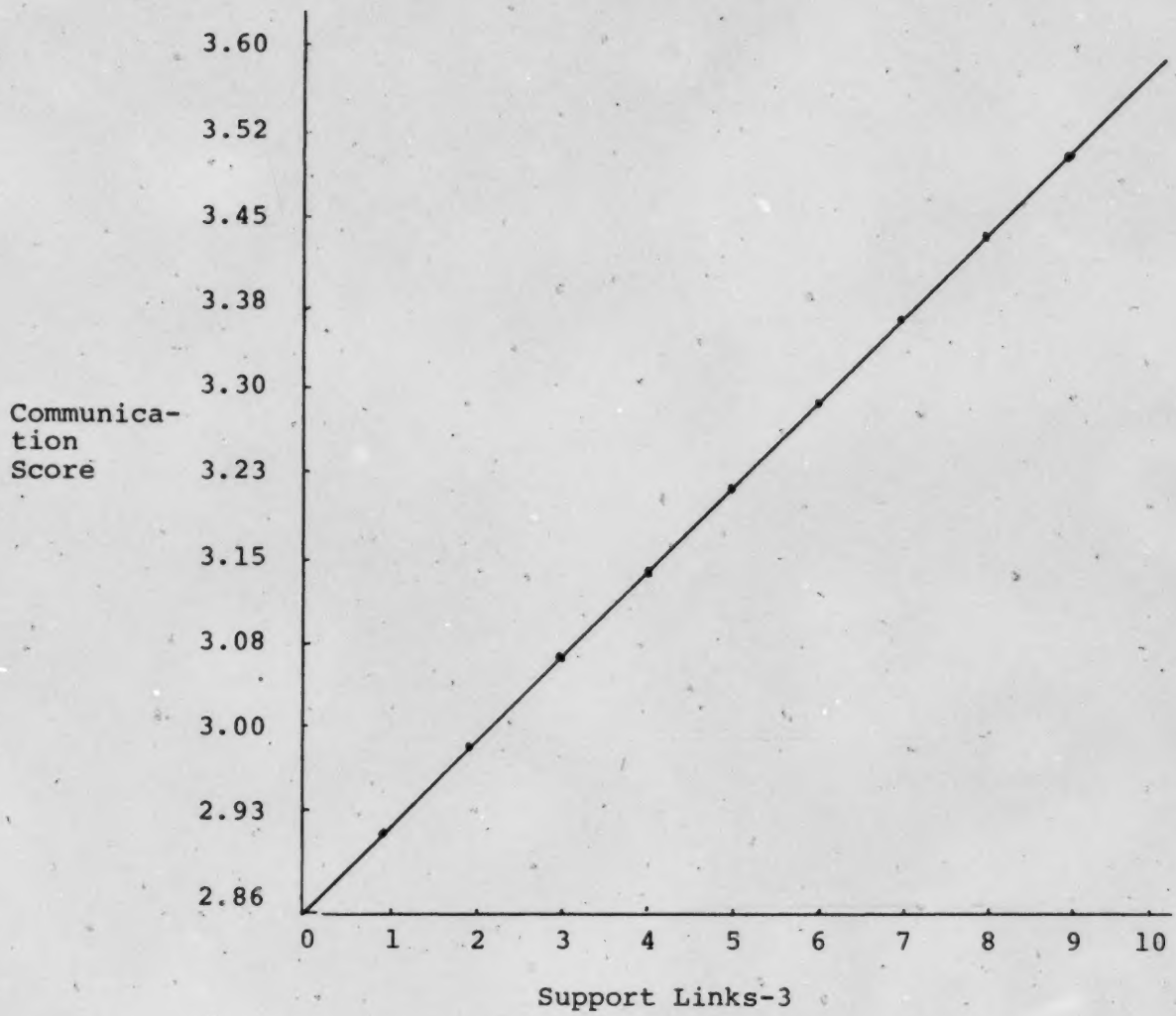


FIGURE 20: Relationship between Communication Score and Support Links-4, Programs

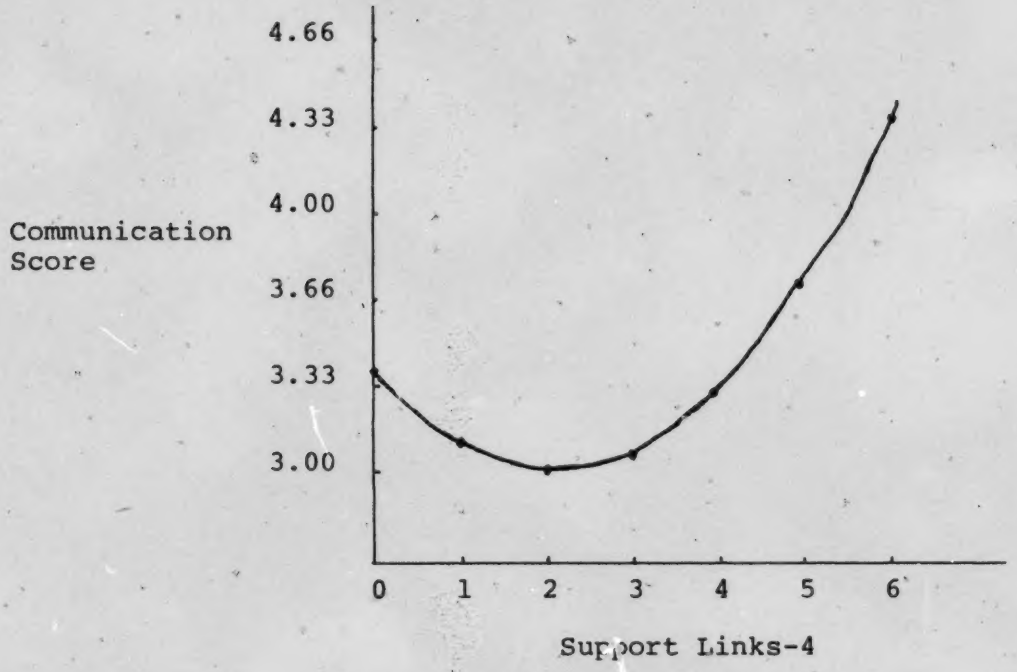
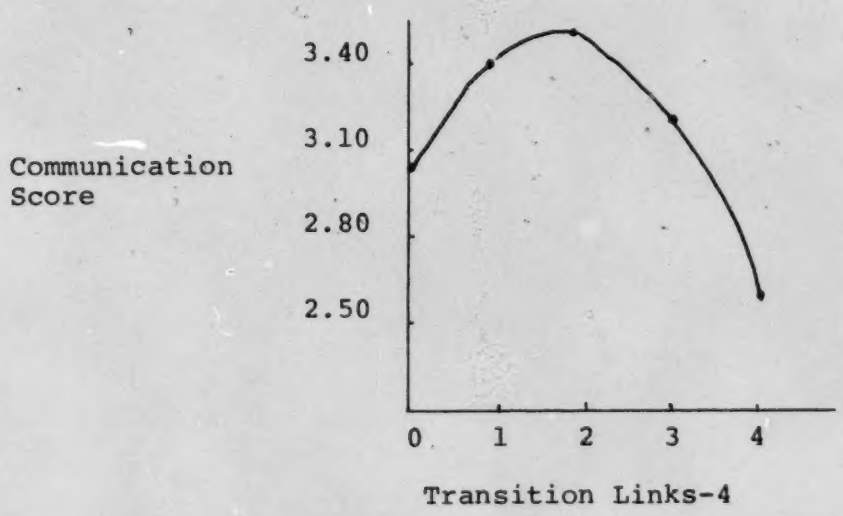


FIGURE 21: Relationship between Communication Score and Transition Links-4, Programs



Synthesis

Integrating the findings for all three groups--total sample, work experience, and program experience regarding scores on communication--it appears that experience in a work setting and in a program make an additive contribution to how much at ease youth feel in their relations with adults. For youth who live with two parents at home, work and then program experience contribute in that order to increased scores. In the absence of participation in other activities, experience in work settings relates to higher scores on communication.

Across all three population groups interactions involving the variables sex, race, the persons youth live with, and parents employed suggest that the configuration of the family influences how youth will approach new environments and relate to them. The significance of these patterns is discussed in the next section of this report. The relationship of GPA and communication is also consistent across the three population groups, with youth having a GPA of less than 2.0 and a 3.5 or higher having the best scores on communication. Support links form a linear relationship with more links corresponding to higher scores. With transition links a few links correspond to higher scores up to a point, then more links correspond to lower scores.

The second aspect of being able to get along with adults which we studied is the extent to which youth perceive that older adults are capable of appreciating the points of view of youth. The findings of the analyses of the relationships of the core model to the scores on the variable empathy follow.

Empathy

Total Sample. Table 20 presents the analysis of covariance for the dependent variable, empathy. The total model is significant at the 0.01 level and accounts for 25 percent of the variance in the scores. Therefore, these data would appear to confirm our assumption that together, youths' background characteristics and the settings in which they participate do significantly contribute to their perspectives toward adults. Taken individually, however, the only variable wich appeared to be statistically significant (0.01) was GPA.

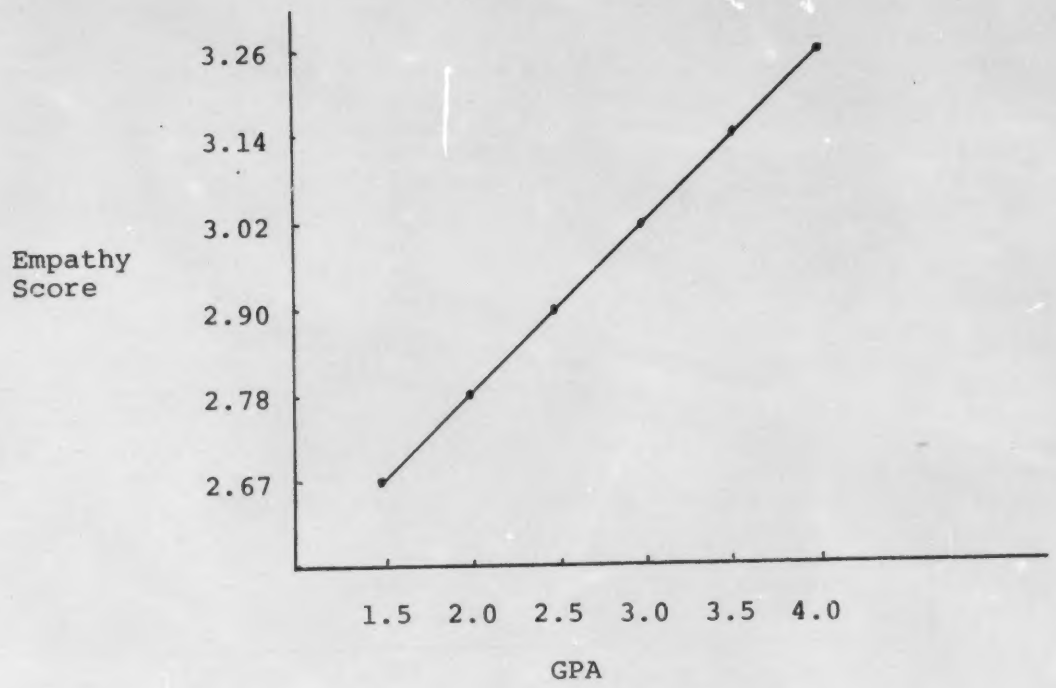
We plotted points which represent the relationship between empathy and GPA. The resulting line (figure 22) shows a linear relationship in which a higher GPA corresponds to higher scores on the scale. This relationship is expressed by the formula:

Predicted Empathy Score + 2.31 + (0.237 * GPA)

TABLE 20: Analysis of Covariance, Empathy Scale, Total Sample

Source	df	Mean Square	F value	PR > F (level of significance)
Group	2	0.02688351	0.09	0.9157
Sex	1	0.42219108	1.38	0.2405
Race	1	0.07366757	0.24	0.6235
Grade	1	0.13456174	0.44	0.5071
Live With	1	0.01001305	0.03	0.8564
School Activities	1	0.30451160	1.00	0.3186
Other Activities	1	0.00027593	0.00	0.9760
Parent Employed	2	0.35727831	1.17	0.3116
Group by Sex	2	0.08849377	0.29	0.7484
Group by Race	2	0.07745983	0.25	0.7759
Group by Grade	2	0.16064699	0.53	0.5912
Group by Live With	2	0.06578623	0.22	0.8061
Group by School Activities	2	0.00005535	0.00	0.9998
Group by Other Activities	2	0.03408684	0.11	0.8943
Group by Parent Employed	4	0.49426009	1.62	0.1694
Sex by Race	1	0.67590305	2.22	0.1378
Sex by Grade	1	0.00865900	0.03	0.8663
Sex by Live With	1	0.14058132	0.46	0.4978
Sex by School Activities	1	0.10386978	0.34	0.5600
Sex by Other Activities	1	0.78034061	2.56	0.1109
Sex by Parent Employed	2	0.03262551	0.11	0.8986
Race by Grade	1	0.00664443	0.02	0.8828
Race by Live With	1	0.74575061	2.44	0.1191
Race by School Activities	1	0.22554007	0.74	0.3906
Race by Other Activities	1	0.55093485	1.81	0.1801
Race by Parent Employed	2	0.16241210	0.53	0.5878
Grade by Live With	1	0.00317680	0.01	0.9188
Grade by School Activities	1	0.80198877	2.63	0.1061
Grade by Other Activities	1	0.14533345	0.48	0.4906
Grade by Parent Employed	2	0.02385642	0.08	0.9248
Live With by School Activities	1	0.06269926	0.21	0.6506
Live With by Other Activities	1	0.00017340	0.00	0.9810
Live With by Parent Employed	2	0.07747190	0.25	0.7759
School Activities by Other Activities	1	0.00460736	0.02	0.9023
School Activities by Parent Employed	2	0.17813978	0.58	0.5584
Other Activities by Parent Employed	2	0.11095868	0.36	0.6954
GPA	1	4.13178295	13.55	0.0003
Error	262	0.30501998	-----	------

FIGURE 22: Relationship between Empathy Score and GPA, Total Sample



The possible interpretation of the implications of this observed relationship between GPA and empathy scores will be discussed later in the text along with the influence of GPA in the remaining analyses.

Work Experience. As with communication, in the second stage of analysis we used the same basic model of personal background characteristics and multisetting participation and added three variables to account for participation in work settings: (1) number of jobs, (2) support links, and (3) transition links. These variables represent the number of different jobs a respondent reported having held, the number of support links present, and the number of transition links present.

The revised model shown in table 21, was significant at the 0.01 level and accounted for 27 percent of the variation of responses on the empathy scale. Again, it appears that the variables selected to describe prior and concurrent experiences in home, school, and work environments with older adults do contribute to youths' view that adults are capable of treating youth as persons with legitimate views and needs. Looking at the individual independent variables we see that support links and GPA are significant at the 0.01 and 0.05 levels respectively.

Figure 23 shows that as with total sample, GPA has a linear relationship with scores on the empathy scale. This relationship is expressed by the formula:

Predicted Empathy Score - 2.541 + (0.1415 * GPA)

There is also a linear relationship between the number of support links and scores on the empathy scale as shown in figure 24. It seems therefore that the respondents who had access to and used the relationship with other adults and peers (which are defined as support links) were also those who scored positively on this variable. This relationship is described by the formula:

Predicted Empathy Score = 2.635 + (0.0551 * SLINKS3)

Program. The total model, shown in table 22, is significant at the 0.08 level and accounts for 40 percent of the variance in scores. While this model is slightly less significant than those discussed earlier, we consider it adequate to support the conclusion that together, the variables used to quantify personal characteristics and prior and concurrent experience with adults do contribute to youths' perspectives toward adults for the

TABLE 21: Analysis of Covariance, Empathy Scale, Work Experience

Source	df	Mean Square	F value	PR > F (level of significance)
Group	1	0.20996255	0.70	0.4031
Sex	1	0.04152420	0.14	0.7098
Race	1	0.00349405	0.01	0.9140
Grade	1	0.33607927	1.12	0.2904
Live With	1	0.04031889	0.13	0.7139
School Activities	1	0.01751011	0.06	0.8091
Other Activities	1	0.05366650	0.18	0.6723
Parent Employed	2	0.02974819	0.10	0.9054
Group by Sex	1	0.01775132	0.06	0.8078
Group by Race	1	0.07333072	0.25	0.6210
Group by Grade	1	0.05260173	0.18	0.6754
Group by Live With	1	0.00596475	0.02	0.8878
Group by School Activities	1	0.01013877	0.03	0.8541
Group by Other Activities	1	0.10525723	0.35	0.5537
Group by Parent Employed	2	0.26028617	0.87	0.4204
Sex by Race	1	0.62979082	2.11	0.1483
Sex by Grade	1	0.19094841	0.64	0.4252
Sex by Live With	1	0.12006385	0.40	0.5271
Sex by School Activities	1	0.12311419	0.41	0.5219
Sex by Other Activities	1	0.33046576	1.10	0.2944
Sex by Parent Employed	2	0.01962185	0.07	0.9365
Race by Grade	1	0.00105538	0.00	0.9527
Race by Live With	1	0.95283115	3.19	0.0757
Race by School Activities	1	0.39873751	1.33	0.2496
Race by Other Activities	1	0.28225942	0.94	0.3325
Race by Parent Employed	2	0.14307530	0.48	0.6205
Grade by Live With	1	0.06786116	0.23	0.6344
Grade by School Activities	1	0.40870148	1.37	0.2438
Grade by Other Activities	1	0.13149686	0.44	0.5080
Grade by Parent Employed	2	0.08269586	0.28	0.7588
Live With by School Activities	1	0.15889892	0.53	0.4669
Live With by Other Activities	1	0.00107631	0.00	0.9522
Live With by Parent Employed	2	0.02443310	0.08	0.9216
School Activities by Other Activities	1	0.26027044	0.87	0.3520
School Activities by Parent Employed	2	0.11163992	0.37	0.6890
Other Activities by Parent Employed	2	0.00305366	0.01	0.9898
Number of Jobs	1	0.09955391	0.33	0.5646
GPA	1	1.13632791	3.80	0.0526
Support Links	1	2.65983777	8.89	0.0032
Transition Links	1	0.40763523	1.36	0.2444
Error	211	0.29914120	----	------

FIGURE 23: Relationship between Empathy Score and GPA, Work Experience

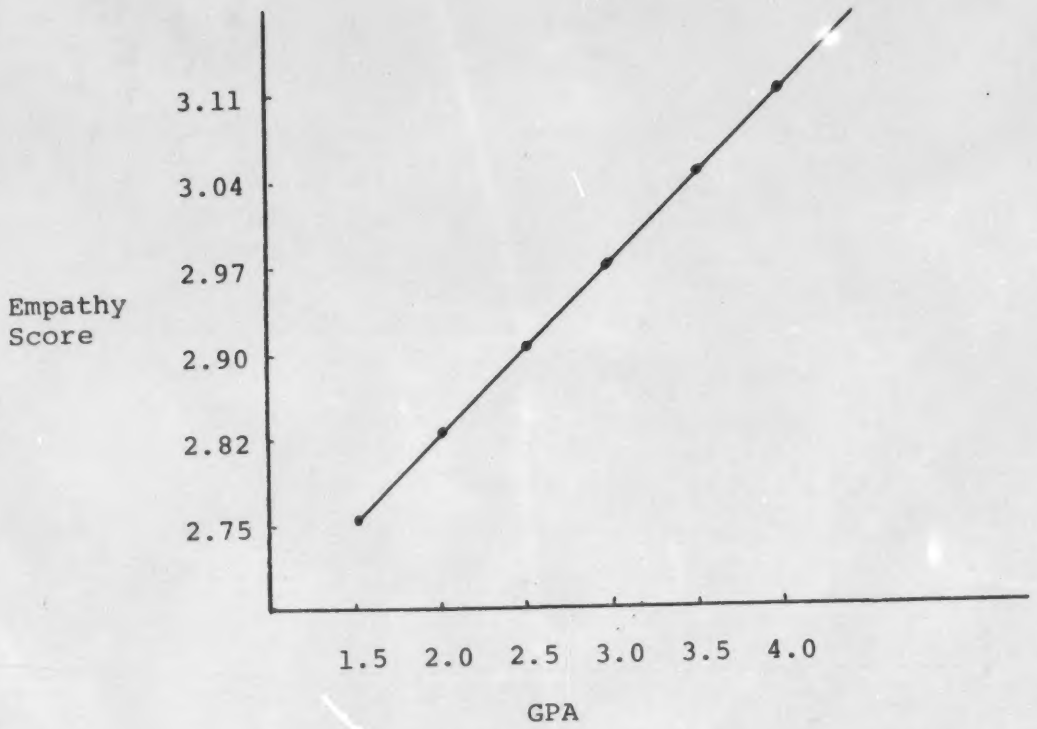


FIGURE 24: Relationship between Empathy Score and Number of Support Links-3, Work Experience

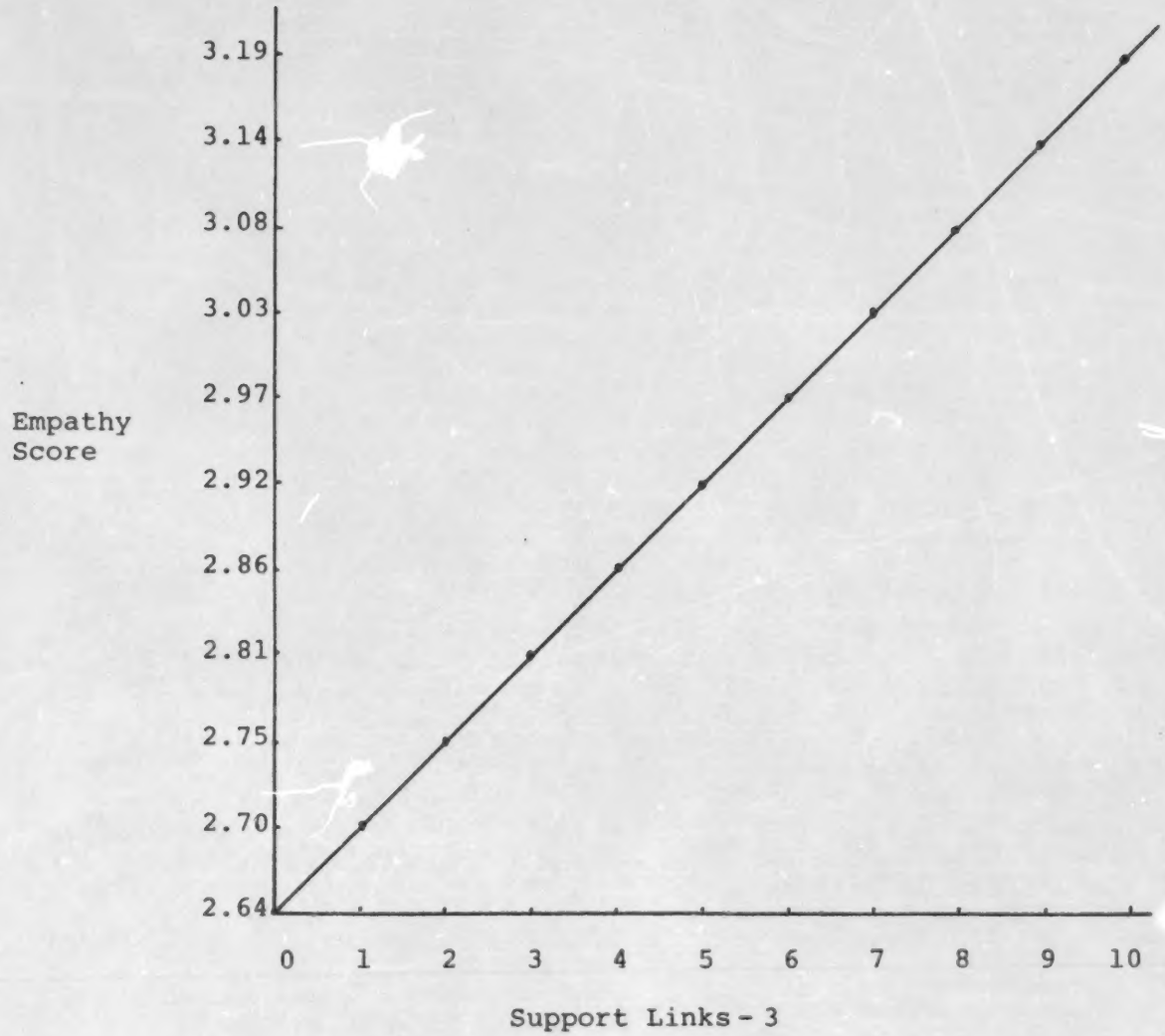


TABLE 22: Analysis of Covariance, Empathy Scale, Programs

Source	df	Mean Square	F value	PR > F (level of significance)
Sex	1	0.00473837	0.02	0.8870
Race	1	0.02724591	0.12	0.7335
Grade	1	0.01895054	0.08	0.7764
Live With	1	1.09056382	4.68	0.0337
School Activities	1	0.94083670	4.03	0.0482
Parent Employed	2	0.66170029	2.84	0.0648
Sex by Race	1	0.51387963	2.20	0.1419
Sex by Grade	1	0.00518596	0.02	0.8819
Sex by Live With	1	0.22480496	0.96	0.3294
Sex by School Activities	1	0.44981918	1.93	0.1690
Sex by Parent Employed	2	0.19597619	0.84	0.4356
Race by Grade	1	0.66564222	2.85	0.0953
Race by Live With	1	0.77968385	3.34	0.0714
Race by School Activities	1	0.00022682	0.00	0.9752
Race by Parent Employed	2	0.29698239	1.27	0.2859
Grade by Live With	1	0.29298126	1.26	0.2659
Grade by School Activities	1	0.33663472	1.44	0.2334
Grade by Parent Employed	2	0.43883366	1.88	0.1594
Live With by School Activities	1	0.27322510	1.17	0.2826
Live With by Parent Employed	2	0.50988614	2.19	0.1194
School Activities by Parent Employed	2	0.18548409	0.80	0.4552
GPA	1	0.04650282	0.20	0.6565
Support Links-3	1	0.43516143	1.87	0.1760
Transition Links-3	1	1.59291695	6.83	0.0108
Transition Links-3 Squared	1	1.73367933	7.43	0.0079
Support Links-4	1	0.68507816	2.94	0.0907
Support Links-4 Squared	1	0.58895695	2.52	0.1162
Transition Links-4	1	0.40729570	1.75	0.1903
Number of Jobs	1	0.08988228	0.39	0.5366
Error	76	0.23326596	--	--

TABLE 23: Mean Scores on Empathy Scale of Youth Programs

Who Youth Live With	N	Mean Score	Participation in School Activities	N	Mean Score
Mother & Father	84	2.93	Some, a Lot	94	2.95
Other*	28	2.84	None	18	2.63

* Other refers to mother only, father only, single guardian, or spouse

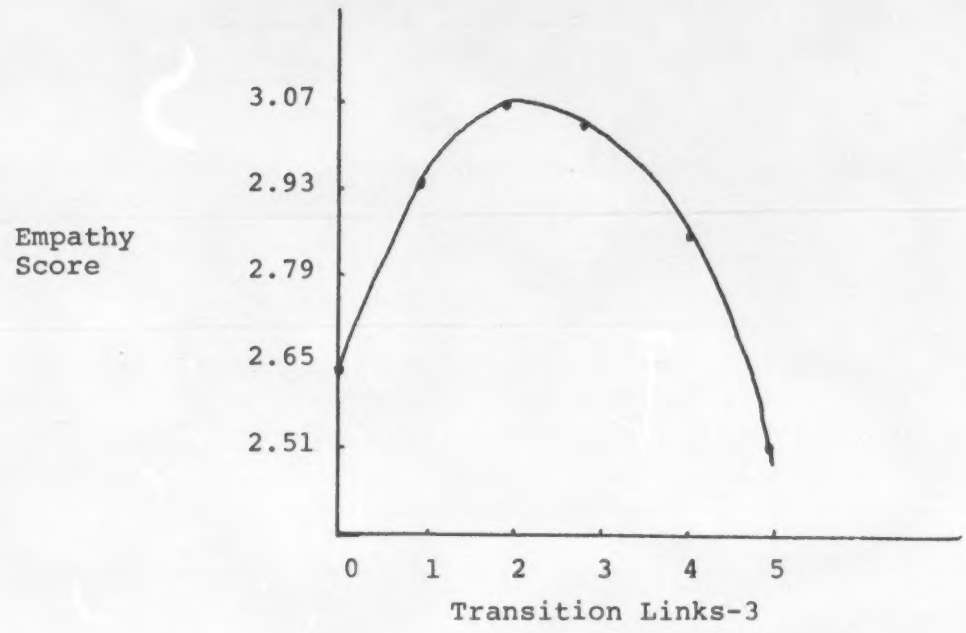
program students. Two variables, who youth live with (0.03) and participation in school activities (0.05) are significant independent predictors of scores on the empathy scales. In prior analyses these two variables were significant in interaction with other variables in the model. However, for the program sample differences can be observed as displayed in table 23.

Considering the consistency of the presence of GPA as a significant variable in prior analyses it is worth noting that in this model with the program students GPA is not significant.

Of the four variables measuring links between home, school and the new environments of program and work, transition links-3 is a significant (0.01) predictor of scores on the empathy scale. Figure 25 shows the relationship between average scores on the empathy scale for the program students corresponding to one to five transition links as defined in part III. For this analysis the existence of one or two links corresponds to increasing scores on the empathy scale. Beyond that number, the direction of the relationship changes and more links correspond to lower scores. The formula for this relationship is as follows:

$$\text{Predicted Empathy Score} = 2.641 + (0.3653 * \text{TLINKS3}) + (-0.07827 * \text{TLINKS3}^2)$$

FIGURE 25: Relationship between Empathy Score and Transition Links-3, Programs



Conclusions about the importance of such a curvilinear relationship do not seem warranted without further study. Rather, one might speculate that with the questions asked we are simultaneously measuring another phenomenon. Perhaps youth who receive a little assistance are those who demonstrate other attributes that enable them to maintain themselves fairly well in new environments. Further, the existence of some links shows they do receive a level of assistance in making a transition. On the other hand, those who have several links may be youth who demonstrate attributes which cause adults to maintain more direct linkage to them in other settings. In this respect, links may indicate the existance of a compensatory or even punitive measure. These observations are only speculation, however, and should be considered as ideas for further inquiry.

Synthesis

Overall, the model used to describe characteristics of the ecological environment of youth did relate to scores on empathy for all three population groups. The interactions of variables race, sex and characteristics of the family environment were not as significant as they had been with communication. GPA however was related in a linear pattern with empathy for the total sample and work experience group. Support links and transition links were found to contribute to scores on empathy for work and program participants.

Changed View of Adults

In addition to the questions and scales just presented we asked simply: Has experience in work settings changed the way you view older adults, yes or no and, if so, how? Youth who had work experience and/or who had participated in a work experience program were to answer this question. After the explanations were read as to whether and why views had changed, a coding system was created that would permit classification:

1. change
   - positive direction
   - negative direction
   - neutral
2. no change
   - but positive view
   - but negative view
   - neutral
3. no explanation

A panel of judges independently categorized the responses. Through discussion, agreement was reached on items which judges

had categorized differently. The majority of answers were coded consistently across judges. Data were then run to form cross tabulations to determine whether any significant pattern would emerge. Inadequate cell size made several analyses inappropriate.

A simple two-way cross tabulation proved most useful. This showed that from a total of 223 youths who answered these questions, 185 or 38 percent of the sample said that experience in work settings had resulted in a positive change in the way they view older adults; another 7.9 percent indicated that they had already had positive views. Of all youth who said they had changed their views toward adults, 62 percent gave positive responses; 32 percent, no explanation; 4 percent, negative response; and 2 percent, neutral answers.

The same two-way tables were run for youth with work experience. The distribution of responses for these two groups was almost identical to the distribution for the total sample.

Summary

With each stage of our analysis we confirmed the basic hypotheses that a set of independent variables that represent environments in which youth form dyadic relations with adults together with personal characteristics such as race and sex, do account for a portion of the variance in scores on the dependent variables. This evidence is important for two reasons. First, it verifies that characteristics of the ecology of youth do contribute to how comfortable youth feel when communicating with adults. Of equal significance is the verification that it is possible to translate components of an overall model, such as Dr. Bronfenbrenner's model of ecological development, to questions that can be presented in questionnaire format and administered anonymously to various populations of youth. Research in this area appears to be fruitful, efficient, and economical.

The second observation is our confirmation that the independent variables--multisetting participation, support links, and transition links appear to predict how youth perceive adults and relate to them, as measured by the dependent variables.

As we have defined and quantified support and transition links, they appear to relate differently to each other and the dependent variables. Findings suggest that more work needs to be done to define what the links stand for and how to present items that collect the information needed. Also, one may ask whether transition links form a positive or negative relationship with the dependent variables according to how new or threatening a new environment is for most youth. That is, if most youth

require a little assistance in making a transition, then youth who require a great deal may also demonstrate less capacity to get along with others. In this case the relationship would be negative. Also, research is needed that applies the concept of links in settings where a greater range of responses is present.

The third major observation is that whatever qualities grade point average represents, that "something" is a consistently significant predictor of scores on what we called empathy and communication. Further, the higher the GPA, the higher the predicted score would be for empathy for the average respondent. For communications, however, a GPA below 2.0 and above 3.0 would predict higher scores. One has to wonder why the relationship between GPA and two dependent variables is so different. Perhaps the ability to appreciate the reasons behind others' views, to separate individuals from groups, to "as if," as well as other skills which are tapped in the empathy scale are also skills tapped in many of the traditional activities used in assigning grades. According to this rationale, the linear relationship between GPA and empathy is understandable. Why GPA forms a horseshoe relationship with communication is far more perplexing. Why the average student, the one with a GPA of 2.0 to 3.0, should stand out as being less at ease when communicating with older adults deserves more study. It is often stated that the average student receives less attention and is overlooked. Perhaps our data confirm this view.

Reviews of the draft report of this study suggested two additional interpretations of the findings in regard to the influence of GPA. The first interpretation is that GPA represents a form of social consensus of the relative presence in a person of a complex of social attributes such as social class position, positive attitudes toward authority, ambition and so forth. Still another suggestion is that GPA should be treated as a dependent variable affecting the ecological environment of the student. Both interpretions confirm our position that GPA as an indicator of how youth function in their environments deserves study.

The fourth observation is that data suggest that personal characteristics, characteristics of the home environment, and outside experiences at school or in the community do contribute to youths' ease with adults and their perception that adults can understand them. However, these factors are significant in interaction with other variables. For example, who is available in the home, i.e., father and mother, father, mother, or guardians, and which parents are employed, have been significant factors in interactions with such different variables as sex, whether youth work or are in a program, and participation in activities. Many different interpretations are plausible to explain the

repeated relationship between the mesosystem of the home, school, work, and activities. The availability of two parents may provide a broader basis of support and access to two role models. Life in a one-parent household may result in extraordinarily close relationships between parent and child. In other circumstances, the demands placed on a single parent may keep that parent away from the home and limit interaction with a child. Still other possibilities are that other family dynamics may result in alienation in some single-parent homes and in positive relations in others.

It is noteworthy that participation in work interacts with other variables in ways indicating that youth who go to work cannot be treated as a homogenous group. For some youth, work seems to function as an alternative experience and correlates with increasing scores on communication. Yet youth who go to work and live in single-parent households tend to have lower scores on the communication variable.

Other significant interactions to keep in mind are those between sex and race and between sex and parent employed. White females score higher on communication with adults than black females. However, there is little difference by race for males. A further complication of the picture is that females living in a traditional household where only the father works outside the home score less favorably on the communication scale than females in households headed by women.

Interactions presented in chapter III also suggest that participation in school activities and participation in other activities function differently in terms of the youth they attract and how the variables contribute to performance on the dependent measures. We should note, however, that as we planned the study and wrote questions, we had not intended school activities and community activities to be separate variables. In the coding and treatment of the data, to make two variables, school and other activities, seemed necessary. Further research designed to collect data on these two forms of activity as different and separate items is needed to challenge or verify the findings of this study.

Finally, we conclude that in planning for youths' participation in work environments, one needs to consider age, sex, and race, which suggest how youth may perceive an experience; the structure of their families, which may have predictable influences on their participation; and their prior participation or nonparticipation in activities which may have a predictable impact on how they will benefit from the opportunity.

CHAPTER IV

IMPLICATIONS FOR POLICY PLANNING AND RESEARCH

Any discussion of this study must begin with the reminder that this study was a preliminary effort to test the feasibility and value of using Dr. Bronfenbrenner's ecological model of human development as a tool to aid in studying how to relate the worlds of home, school, community, and work for improving the relationships between youth and adults. We argue that the ability to feel at ease in communicating with adults and the ability to accept adults as associates are necessary prerequisites for getting along in work and in future family roles.

The most significant finding of the study is that there is an ecology of youth development that does appear to be related to performance on such measures as ease in relating to adults and perspective toward adults. Further, the interactions suggest that different patterns in the ecology of a youth relate to different but predictable predispositions to new experience.

Research in the following areas would help to determine the extent of their influence: household structure, race and sex, school and community activities, grade point average, and support and transition links. A brief description of the direction such research could take follows.

Recommendations for Research

Household Structure

Nationally there is growing concern over the impact of single parent families on a number of facets of the development of children and youth. There is increasing awareness that youth who develop without the presence of one parent, either father or mother, encounter problems in ego identity that carry over into their own marriages. Our research suggests that whether two adults are present in the home and also which parents are employed may relate to how youth perceive and benefit from experiences with older adults in school, work, and community.

For example, our research suggests that for youth with both parents present in the home, additional experiences in work and

in programs may make additional contributions to their ease in communicating with adults. The relationship among these variables is more complex in single-parent households.

Further, we found that who is employed, i.e., father, father and mother, or mother, interacts with whether youth work, enter programs offering work experience, or stay out of work experience, as well as with their communication scores. In this area further research on youth who live in households where the mother is the breadwinner (and probably also the only parent) in contrast to those who enter programs or who stay out of work experience, is warranted. The low communication scores for this group most likely are indicative of other circumstances which may have broad implications for the future development of these youth.

The Significance of Sex and Race

Today there is also growing concern about how to accomplish occupational equity for women. Clearly the seeds of such progress lie in helping young women develop the skills required not only for entering the labor market, but also for career advancement in roles and occupational areas not typically held by women.

An important aspect of successful negotiation of new roles in work settings is acquiring a feeling of ease in approaching older adults, seeking their advice, and contributing to discussions about work activities. Our research suggests that black females may function at a significant disadvantage in these aspects of worksite behaviors. This relative discomfort in communicating with older adults may influence choices of careers and educational opportunities as well as performance in settings where older adults are present.

Another significant observation regarding the importance of sex is that males and females may be subject to different influences in family structure in terms of their communication with older adults. Young women whose mothers were employed as heads of household had the highest scores on the communication scale, while males who lived in a single parent household had the lowest. Conversely, females in households where two parents were present but only the father worked had the lowest scores. The influence of employment of parent was minimal for males.

The implications of these findings are that females, in particular black females and those from father-headed households may enter adult role settings at some disadvantage. At the same time support in overcoming or compensating for reluctance to communicate with older adults may be provided at little inconvenience or cost.

Further research is suggested on the nature of the difference between males and females on communication. We further suggest study of the different approaches to remediation or compensation implied by the ecological model.

School and Community Activities

Still another area of common folk wisdom that perhaps is little understood is how participation in activities, both in school and in the community, contributes to the acquisition of knowledge, attitudes, and skills required for success in school and later adult roles.

Our research suggests that participation in school activities and in community activities may differ in how that participation contributes to youths' ease in communicating with adults. Or, it may be that youth who seek out experiences in the community, especially to the exclusion of school activities, may be youth who require special attention. Another group that may warrant attention are those who do not participate in school or community activities. The matter of who seeks experiences with adults and where and how these experiences contribute to further opportunities appears to be a more complex area of investigation than was previously assumed.

Grade Point Average

On a daily basis school personnel, community members, and employees make assumptions as to how youth will perform in various settings depending on their status as poor students, fair students, or good students. Often programs of certain opportunities are targeted to low-achieving or high-achieving students.

Our research suggests, however, that the relationship of grade point average to attributes associated with getting along with adults is a complex concern that requires further study. First, we observed that the attitudes and skills tapped by the empathy scale and those drawn upon by the communication scale relate consistently but differently to GPA. For empathy the commonly assumed relationship between GPA and higher scores holds true: the higher the GPA, the higher the empathy score. However, for communication, those with the highest scores are those thought of as fair students (1.5 to 2.5) and very good students (over 3.0). The average student, who is often the one not included in special programs, scores the lowest on this measure.

Since GPA is information readily available and often used as a proxy for some other variable, we believe further research is warranted to improve understanding of how it relates to both cognitive and social dimensions of youths' development.

Links

In thinking about how to study the phenomenon of participation in multiple settings, we decided to consider mesosystem links that we defined as support links and links that we called transition links. As anticipated we found that the number of support links appears additive and positive, with more links relating to higher scores in both empathy and communication. However, we found that transition links related positively to a point and then formed a negative relationship.

What our data suggest is that by planning for the social support of youth, i.e., provision of opportunities to talk about their activities and to become acquainted with the worlds in which they function--home, community, and it may be possible to contribute to their growth in new experiences. More research is suggested, however, to delineate how, when, and under what circumstances such attention may be most beneficial.

Implications for Policy

Any statement that individuals are different is almost a cliché. Yet social institutions do require fitting people into groups both for providing services and for evaluating programs. We suggest new terms for thinking about groups that more accurately reflect the functional relationships youth have with other significant environments in their lives. We propose that by applying an ecological framework in planning programs and evaluating their outcomes one can more adequately serve individual needs through programs targeted for groups.

Considering the problem of youths' transition to adult roles in the light of the linking environments in which youth often function offers opportunities for intervention that may ensure greater success in entering and succeeding in adult roles. The tendency is to focus on specific jobs or skills that youth may be expected to perform and to treat the individuals as if they can function in a work environment isolated from influences of other microsystems in which they function. Information regarding age, sex, and race is routinely collected for participants in government-sponsored activities. However, this information is seldom, if ever, related to data on family structure or the employment of parents for purposes of predicting attitudes,

skills, and expectations youth will take with them to their new adult environments, such as work.

Research suggests that taking into account implications of the ecology does not require complicated programs and special materials or equipment. Something as simple as encouraging teaching personnel to talk with youth about their experiences outside of school provides support to youth. Having a teacher, parent, or friend accompany a youth to a new environment such as a worksite establishes a transition link. Youth who have had few experiences with older adults can be exposed to experiences with adults that will help them be more ready for experiences such as those they will face at work.

These are but a few examples of how basic and perhaps simplistic sounding are the possible applications of the findings of this study. Many more recommendations for methods of conceiving programs are suggested by the more detailed analyses of the interaction between independent variables for personal characteristics, participation in multiple settings, and transition and support links. However, additional research is recommended before evaluating the importance of the interactions suggested by our data.

Any implications for policy and decision making which may be implied by the analysis of data for this study must be stated with the warning that this study does not represent years of research across a large and comprehensive sample. With this warning and in conclusion, we offer two rather general points which we believe require consideration in the planning or evaluation of work experience programs for youth.

1. Programs may need to be planned and evaluated with consideration for certain differences among youth: (1) sex, (2) race, (3) persons youth live with, (4) parent employed, and (5) prior participation in school and other activities.

2. They need to be conceptualized and planned in terms of ecological concepts for linking home, community, school and work. Whenever programs are designed to assist youth in making the transition to work, they should be conceptualized and planned in terms of ecological propositions.

APPENDIX A

STUDENT QUESTIONNAIRE

LEARNING IN WORK

Student Questionnaire

We would like to ask your help in a study to learn more about high school students' experiences with older adults and work. Your participation in this study is voluntary. Your answers to these questions will be anonymous.

We would like your signature to indicate that you understand the purpose of the study and that you volunteer to participate.

Thank you.

Name ____ _____

Date _____

The National Center for Research in Vocational Education

1980

LEARNING IN WORK

PART I

The following questions are to help us gather some background information. Please place an "X" in the box next to the appropriate answer.

1. Age: ☐15 ☐16 ☐17 ☐18 ☐Over 18

2. Grade: ☐11 ☐12

3. Sex: ☐Male ☐Female

4. Who do you live with most of the time?
   ☐Mother (or female guardian) ☐Father (or male guardian)
   ☐Mother and Father (or guardians) ☐Other/define: _____

5. Do one or both or your parents work outside the home?
   ☐Yes, Father ☐Yes, Mother ☐No, Father ☐No, Mother

6. Do you participate in extracurricular activities related to school?
   ☐No ☐Yes, some ☐Yes, a lot

7. Activities in which I have been an active member, either in the past or currently are: (Please place an "X" by each one in which you have been active)
   ☐Scouting ☐Music groups ☐Church groups ☐Team sports
   ☐Volunteer work ☐Others: 1: _____ ☐None
   2. _____

PART II

The following questions ask your views on adults who are twenty years old or more. There are no right or wrong answers.

DIRECTIONS: Read each statement carefully and decide how you feel about it. Please *circle:*

SA = if you Strongly Agree with the statement.
A = if on the whole you Agree.
U = if you cannot make up your mind or don't understand the statement.
D = if on the whole you Disagree.
SD = if you Strongly Disagree with the statement.

Definition: Older Adult—a person who is over 20 years old.

		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1.	Most older adults respect student opinions	SA	A	U	D	SD
2.	Older adults are too old fashioned in their ideas	SA	A	U	D	SD
3.	Older adults are not able to understand the problems of students	SA	A	U	D	SD
4.	Older adults are willing to consider students' solutions to problems	SA	A	U	D	SD
5.	Older adults don't realize that things are different today from when they were teenagers	SA	A	U	D	SD
6.	So far as ideas are concerned, students and older adults live in different worlds	SA	A	U	D	SD
7.	Older adults do understand today's students	SA	A	U	D	SD
8.	Most older adults are not willing to listen to students	SA	A	U	D	SD
9.	Older adults are out of step with the times	SA	A	U	D	SD
10.	The best way to handle older adults is to tell them what they want to hear	SA	A	U	D	SD
11.	Older adults are forever sticking their noses into things that are none of their business	SA	A	U	D	SD
12.	Older adults don't deal with problems of students very well	SA	A	U	D	SD
13.	Older adults are set in their ways	SA	A	U	D	SD
14.	Older adults are really interested in students	SA	A	U	D	SD
15.	I feel more comfortable around older adults than around friends my age	SA	A	U	D	SD
16.	In a group of older adults, I don't say what I think because I'm afraid they may not like me	SA	A	U	D	SD
17.	Older adults are interested in the same things that interest me	SA	A	U	D	SD
18.	Most of my friends are older adults	SA	A	U	D	SD
19.	I feel free to say what I want around older adults	SA	A	U	D	SD

Please read each question, decide how you feel about it and check the answer that is most true for you.

20. How well do you feel you get along with older adults?
☐ Very well ☐ Fairly well ☐ Not very well

21. How comfortable do you feel talking with your guidance counselor?
☐ Very comfortable ☐ Fairly comfortable ☐ A little uncomfortable ☐ Not very comfortable

22. How often do you take time to talk with one of your teachers about things which interest you?
☐ Regularly ☐ Once in a while ☐ Seldom or never

23. How well do you feel you get along with your teachers?
☐ Very Well ☐ Fairly Well ☐ Poorly

24. How often do you choose to talk with older members of your family about things which interest you?
☐Often ☐Once in a while ☐Seldom

25. Have you held a job for which you were paid for three months or more?
☐No ☐Yes

26. Have you ever been enrolled in a work experience program for three months or more?
☐No ☐Yes ☐Which one? _____

27. Do you leave school before the end of the school day in order to go to work?
☐No ☐Yes

IF YOU HAVE NOT HELD A PAYING JOB OR BEEN IN A WORK EXPERIENCE PROGRAM FOR THREE MONTHS OR MORE OR IF YOU ARE NOT IN A WORK EXPERIENCE PROGRAM PLEASE STOP NOW. THANK YOU.

IF YOU HAVE HELD A PAYING JOB FOR THREE MONTHS OR MORE OR IF YOU HAVE BEEN IN A WORK EXPERIENCE PROGRAM, PLEASE CONTINUE.

PART III

The following questions are about your relationship with the workplace. Please place an "X" by the appropriate answer.

1. Does your parent(s) know your employer?
☐No ☐Yes

2. Do you talk about work experiences at home?
☐Never ☐Sometimes ☐A lot

3. Do you talk about work experiences with your teachers?
☐Never ☐Sometimes ☐A lot

4. Do you talk about work with your friends at school?
☐Never ☐Sometimes ☐A lot

5. Are any of your school friends at the same work site?
☐No ☐Yes

6. Does any one in your family work where you work?
☐No ☐Yes

7. Did any of your family know (personally) anybody who works at the same place you do before you started to work there?
☐No ☐Yes

8. Did you know (personally) anybody who works at the same place you do before you started work there?
☐No ☐Yes

9. Did you talk with your work supervisor prior to your starting work?
☐No ☐Yes

10. Has your employer ever visited your home?
☐No ☐Yes ☐Don't know

11. Do you parents know a lot about:

the school	☐No	☐Yes	
the job you have	☐No	☐Yes	
your employer	☐No	☐Yes	☐Does not apply
the program you're in	☐No	☐Yes	☐Does not apply

12. How do your parents/guardians feel about your current job?
☐are in favor of it ☐Not sure how they feel ☐don't think they are in favor of it

13. How many different jobs have you held? _____

14. Most of the people I work closely with (my co-workers) are:

A.	☐ Older than I am	☐ About the same age as I am	☐ Younger than I am
B.	☐ Mostly men	☐ About half are men and half are women	☐ Most are women
C.	☐ Supervisors	☐ Supervisors and co-workers	☐ Co-workers only

15. Has experience in work settings changed the way you view older adults?
☐ Yes ☐ No
Please explain why or why not:

IF YOU HAVE NOT BEEN ENROLLED IN A WORK EXPERIENCE PROGRAM FOR THREE MONTHS PLEASE STOP. IF YOU HAVE BEEN ENROLLED IN A WORK EXPERIENCE PROGRAM FOR THREE MONTHS, PLEASE CONTINUE. THANK YOU.

PART IV

The following questions are about your relationship with your work experience program. There are no right or wrong answers. Please place an "X" by the appropriate answer.

1. Did one or both parents come with you the first time you spoke to the counselor/co-ordinator about participating in a work experience program?
☐ No ☐ Yes

2. Do(es) your parents talk with your coordinators or counselors about your experiences at work?
☐ No ☐ Yes

3. How often do the following groups of people meet together?

	Almost every day	Frequently	Seldom	Almost never
You and your coordinator	☐	☐	☐	☐
Your coordinator and your employer	☐	☐	☐	☐
You and your parents and coordinator	☐	☐	☐	☐

4. Has your coordinator ever visited your home?
☐ No ☐ Yes

5. Did you know your coordinator (personally) before you entered the program?
☐ No ☐ Yes

6. Did your coordinator go with you the first time you went to the job site to visit your employer?
☐ No ☐ Yes

7. Did you know any other students in your work experience program your first day in the program?
☐ No ☐ Yes

8. How do your parents/guardians feel about your participation in this program?
☐ Happy about it ☐ Uncertain how they feel ☐ Unhappy about it

Thank you for your participation.

INSTRUCTIONS FOR ADMINISTERING QUESTIONNAIRE

PLEASE READ THE FOLLOWING INSTRUCTIONS TO THE STUDENTS AS A GROUP. NO OTHER INSTRUCTIONS SHOULD BE GIVEN.

YOU ARE BEING ASKED TO PARTICIPATE IN A STUDY OF HIGH SCHOOL STUDENTS' EXPERIENCES WITH OLDER ADULTS AND WORK. PARTICIPATION IS VOLUNTARY. ALL ANSWERS WILL BE TREATED ANONYMOUSLY. NO INDIVIDUAL WILL BE IDENTIFIED.

IF YOU AGREE TO PARTICIPATE IN THE STUDY, PLEASE SIGN THE FRONT PAGE.

FOR THE STUDY, "OLDER ADULTS" MEANS A PERSON 20 YEARS OF AGE OR OLDER.

THE QUESTIONNAIRE IS DIVIDED INTO FOUR PARTS.

EVERYONE IS TO ANSWER PARTS I AND II.

IF YOU HAVE HAD A JOB FOR 3 OR MORE MONTHS OR HAVE BEEN IN A WORK EXPERIENCE PROGRAM FOR THREE OR MORE MONTHS, ANSWER PART III.

IF YOU HAVE BEEN IN A WORK EXPERIENCE PROGRAM FOR 3 MONTHS OR MORE, PLEASE ANSWER PART IV.

THANKS FOR HELPING

<u>TO THE ADMINISTRATOR</u>:

PLEASE DO NOT INTERPRET ITEMS FOR INDIVIDUALS. IF YOU GIVE FURTHER EXPLANATION PLEASE GIVE IT TO THE GROUP.

APPENDIX B

COORDINATOR AND COUNSELOR QUESTIONNAIRES

LEARNING IN WORK

COORDINATOR'S QUESTIONNAIRE

We would like your assistance in a study of how various aspects of work experience programs contribute to past experiences of the student in helping youth to learn to communicate more positively with adults.

To enable us to understand what your program seeks to accomplish, how it operates and your perceptions of how different youth benefit from the program, please answer the following questions.

There are no correct or incorrect answers to these questions. We would appreciate your answering the questions as fully and frankly as possible.

Name _____ Program _____

Position _____

I. Coordinator - about yourself

A. Please describe your own professional background.

B. How/why did you become a program coordinator?

C. Describe the role of coordinator. What do you do? What is your relationship to students? To employers?

II. Prepared information about the program. Please provide a copy of:

- any policies for operation
- teacher's manual
- letter to parents
- letter to student
- letter to employer
- handbook used for program
- brochures
- teaching materials used to teach about the environment of the workplace
- evaluation guides

III. Program description

A. Please provide the stated purposes of your program.

B. Historical background of the program in the school.

1. Why/how was the program begun?

2. How long has it been operating?

3. What have been the enrollment patterns for the program? Has it grown, dropped, been stable; changed in character?

IV. Funding and administration

A. How is the program funded?

B. Are there specific sponsor requirements for the program which must be met? What are they?

C. Do participants receive the following?

1. Academic credit
   How much?
   How is it determined?

2. Pay
   How much?
   On what basis, how is it determined?

V. Student selection

A. On what basis are students selected to participate in your program?

1. How do students find out about the program?

2. What is the procedure for recruitment, orientation and selection of participants?

3. What qualifications do you believe are important for students to possess to take advantage of the program?

B. Are parents involved in the initial selection process? If so, how?

V. Student selection (continued)

C. Describe your current enrollment in terms of your perception of youths':

1. Socio-economic status

2. Educational aspirations

3. Occupational aspirations

4. Educational history--past academic success

5. Capability to work with adults

6. What percentage of your students have had jobs before?

7. What percentage of your students have had part-time jobs before entering the program?

V. Student selection (continued)

C. 8. Why do you believe most students enroll in the program?

9. What is their level of participation in school? In other activities? Reason for involvement in the program?

10. What is the most significant contribution of the program to your students?

11. Which segment of the student population is your program designed to serve? Is this who it actually serves?

12. Do you believe there are youth who need the program but who do not enroll?

a. Please explain.

b. What factors, either personal or institutional discourage their participation?

VI. Placement of students in work settings

A. What criteria do you use to select worksites?

B. How do you decide which student to place in each setting?

C. How do you plan multiple experiences (a sequence of experiences) for a student?

D. In what ways are sequential experiences similar? How are they different?

VII. Linking home, school and work experience

Please describe the means of communication between you as program coordinator, the employer, and parents that may have implications for the student.

Include:

A. On the average, how often do you talk with your students' parents?

B. Do your students' parents ever visit them at work?

C. Are there other ways that parents get involved with your program?

D. Do you go with a student the first time he/she visits a worksite?

E. On the average, how often do you talk with your students' employers?

F. What means, arrangement do you use to learn from the student how their work experience is going?

G. Do you ever visit your students at home?

VIII. Evaluation

A. What criteria do you use to evaluate student growth and achievement in the program?

B. Do you have any follow-up study of past graduates?

C. What types of prior experience would better prepare students for your program before they enroll?

Thank you for your assistance.

LEARNING IN WORK

COUNSELOR'S QUESTIONNAIRE

I. What is your role in the identification, recruitment and selection of students for EBCE and for cooperative education?

II. What criteria, qualification, characteristics do you think about in determining who you think would be a good candidate for EBCE? For cooperative education?

III. Are there factors (personal, social, institutional, operational, etc.) which constrain what types of youth are likely or able to participate in FACE? In cooperative education?

IV. Is it possible to characterize the students who select EBCE? Cooperative education? If so, what adjectives or adverbs would you use for these groups?

APPENDIX C

TABLES

TABLE C-1

MEANS, STANDARD DEVIATIONS,
MINIMUM AND MAXIMUM
VALUES FOR EMPATHY
AND COMMUNICATION SCALES

VARIABLE	N	MEAN	STANDARD DEVIATION	MINIMUM VALUE	MAXIMUM VALUE
EMPATHY	319	2.96	0.58	1.50	4.79
COMMUNICATION	319	3.25	0.59	1.50	4.90
GPA	319	2.76	0.65	1.22	4.00

TABLE C-2

MEANS, STANDARD DEVIATIONS, MINIMUM
AND MAXIMUM VALUES
FOR TOTAL GROUP RESPONSE

VARIABLE	N	$\bar{X}$	SD	MIN.	MAX.
P2Q23	319	2.46	0.52	1.00	3.00
P2Q24	316	2.50	0.61	1.00	3.00
P2Q25	314	1.80	0.40	1.00	2.00
P2Q26A	320	1.35	0.48	1.00	2.00
P2Q27	309	1.37	0.48	1.00	2.00

TABLE C-3

MEANS, STANDARD DEVIATIONS, MINIMUM
AND MAXIMUM VALUES
FOR TOTAL GROUP RESPONSE

VARIABLE	N	$\bar{X}$	SD	MIN.	MAX.
P2Q1	317	3.16	1.01	1.00	5.00
P2Q2	318	2.94	1.04	1.00	5.00
P2Q3	313	2.92	1.07	1.00	5.00
P2Q4	313	3.37	0.91	1.00	5.00
P2Q5	316	2.45	1.10	1.00	5.00
P2Q6	316	2.86	1.06	1.00	5.00
P2Q7	309	3.15	0.93	1.00	5.00
P2Q8	312	3.22	0.94	1.00	5.00
P2Q9	310	3.07	0.97	1.00	5.00
P2Q10	314	2.96	1.14	1.00	5.00
P2Q11	316	2.71	1.08	1.00	5.00
P2Q12	315	2.90	0.98	1.00	5.00
P2Q13	316	2.44	0.97	1.00	7.00
P2Q14	313	3.28	0.91	1.00	5.00
P2Q15	315	2.47	1.13	1.00	5.00
P2Q16	317	3.36	1.08	1.00	5.00
P2Q17	317	2.72	0.95	1.00	5.00
P2Q18	318	2.43	0.99	1.00	5.00
P2Q19	316	3.16	1.07	1.00	5.00
P2Q20	319	2.49	0.50	2.00	3.00
P2Q21	318	2.90	0.83	1.00	4.00
P2Q22	319	1.96	0.7[illegible]	1.00	3.00

TABLE C-4

Intercorrelation Matrix for Scale Items in
Order of Strength of the Relationship

P2Q1

P2Q1	Empath	P2Q4	P2Q14	Commun	P2Q8	P2Q21	P2Q6
1.00	0.46	0.40	0.35	0.29	0.28	0.21	0.21
P2Q16	P2Q3	P2Q19	P2Q12	P2Q20	P2Q5	P2Q18	P2Q17
0.21	0.20	0.20	0.19	0.18	0.18	0.18	0.18
P2Q11	P2Q13	P2Q10	P2Q2	P2Q7	P2Q9	P2Q27	P2Q23
0.17	0.17	0.15	0.15	0.15	0.14	0.14	0.11
P2Q24	P2Q22	P2Q26A	P2Q15	P2Q25	GPA		
0.10	0.10	0.09	0.07	-0.02	-0.01		

P2Q2

P2Q2	Empath	P2Q3	P2Q9	P2Q5	P2Q12	P2Q11	P2Q6
1.00	0.61	0.49	0.47	0.44	0.36	0.36	0.34
P2Q10	P2Q13	P2Q8	Commun	P2Q23	P2Q16	GPA	P2Q21
0.34	0.30	0.27	0.25	0.24	0.23	0.23	0.21
P2Q20	P2Q17	P2Q7	P2Q1	P2Q22	P2Q25	P2Q14	P2Q27
0.20	0.16	0.15	0.15	0.11	-0.11	0.09	0.08
P2Q26A	P2Q24	P2Q19	P2Q18	P2Q15	P2Q4		
-0.07	0.06	0.04	0.03	0.02	0.02		

P2Q3

P2Q3	Empath	P2Q5	P2Q2	P2Q6	P2Q9	P2Q12	P2Q16
1.00	0.64	0.50	0.49	0.47	0.44	0.39	0.32
P2Q11	P2Q10	Commun	P2Q8	P2Q13	P2Q23	P2Q20	P2Q1
0.31	0.30	0.29	0.29	0.28	0.22	0.22	0.20
GPA	P2Q21	P2Q7	P2Q14	P2Q25	P2Q22	P2Q17	P2Q24
0.18	0.17	0.16	0.16	-0.14	0.14	0.14	0.14
P2Q27	P2Q19	P2Q4	P2Q15	P2Q26A	P2Q18		
0.11	0.11	0.09	0.09	-0.02	0.01		

P2Q4

P2Q4	P2Q1	Empath	Commun	P2Q14	P2Q18	P2Q21	P2Q7
1.0	0.40	0.36	0.30	0.27	0.23	0.20	0.20
P2Q19	P2Q20	P2Q16	P2Q12	P2Q8	P2Q17	P2Q22	P2Q15
0.20	0.20	0.18	0.18	0.17	0.17	0.15	0.15

Intercorrelation Matrix for Scale Items in
Order of Strength of the Relationship

P2Q4 (continued)

P2Q9	P2Q13	P2Q6	P2Q11	P2Q10	P2Q3	P2Q5	P2Q23
0.15	0.14	0.13	0.13	0.11	0.09	0.09	0.07
P2Q24	P2Q27	GPA	P2Q2	P2Q26A	P2Q25		
0.04	-0.03	0.02	0.02	-0.02	-0.01		

P2Q5

P2Q5	Empath	P2Q3	P2Q9	P2Q6	P2Q2	P2Q11	P2Q13
1.00	0.68	0.50	0.46	0.45	0.44	0.42	0.39
P2Q12	P2Q10	P2Q8	Commun	P2Q20	P2Q16	P2Q21	P2Q17
0.39	0.38	0.34	0.32	0.29	0.28	0.27	0.20
P2Q23	GPA	P2Q7	P2Q1	P2Q19	P2Q25	P2Q24	P2Q14
0.20	0.19	0.18	0.18	0.15	-0.13	0.12	0.10
P2Q22	P2Q18	P2Q4	P2Q26A	P2Q15	P2Q27		
0.10	0.09	0.09	-0.06	0.06	0.02		

P2Q6

P2Q6	Empath	P2Q3	P2Q9	P2Q5	P2Q13	P2Q12	P2Q10
1.00	0.68	0.47	0.47	0.45	0.41	0.41	0.36
P2Q8	P2Q2	P2Q11	GPA	Commun	P2Q20	P2Q17	P2Q7
0.35	0.34	0.34	0.33	0.28	0.24	0.23	0.22
P2Q16	P2Q1	P2Q24	P2Q21	P2Q14	P2Q22	P2Q4	P2Q19
0.22	0.21	0.20	0.18	0.18	0.15	0.13	0.13
P2Q23	P2Q25	P2Q27	P2Q15	P2Q26A	P2Q18		
0.12	-0.10	0.06	0.04	-0.03	0.01		

P2Q7

P2Q7	Empath	P2Q6	P2Q15	Commun	P2Q17	P2Q18	P2Q4
1.00	0.34	0.22	0.22	0.21	0.21	0.20	0.20
P2Q5	P2Q19	P2Q3	P2Q13	P2Q20	P2Q2	P2Q1	P2Q9
0.18	0.18	0.16	0.16	0.15	0.15	0.15	0.15
P2Q14	P2Q11	P2Q10	P2Q21	P2Q8	P2Q27	P2Q12	P2Q16
0.12	0.12	0.11	0.09	0.09	0.08	0.08	0.08
P2Q24	P2Q22	GPA	P2Q26A	P2Q23	P2Q25		
-0.06	0.06	0.05	0.05	0.05	-0.04		

Intercorrelation Matrix for Scale Items in
Order of Strength of the Relationship

P2Q8

P2Q8	Empath	P2Q12	P2Q9	P2Q6	P2Q5	Commun	P2Q3
1.00	0.56	0.42	0.37	0.35	0.34	0.29	0.29
P2Q1	P2Q13	P2Q2	P2Q16	GPA	P2Q11	P2Q20	P2Q10
0.28	0.28	0.27	0.27	0.27	0.26	0.23	0.23
P2Q14	P2Q22	P2Q4	P2Q19	P2Q24	P2Q21	P2Q23	P2Q25
0.21	0.19	0.17	0.17	0.17	0.17	0.11	-0.11
P2Q15	P2Q7	P2Q17	P2Q26A	P2Q18	P2Q27		
0.09	0.09	0.08	-0.06	0.05	-0.00		

P2Q9

P2Q9	Empath	P2Q2	P2Q6	P2Q5	P2Q11	P2Q10	P2Q13
1.00	0.70	0.47	0.47	0.46	0.45	0.45	0.44
P2Q3	P2Q12	P2Q8	GPA	P2Q16	Commun	P2Q17	P2Q21
0.44	0.42	0.37	0.36	0.29	0.26	0.18	0.18
P2Q23	P2Q24	P2Q22	P2Q20	P2Q7	P2Q4	P2Q1	P2Q26A
0.17	0.17	0.17	0.16	0.15	0.15	0.14	-0.13
P2Q14	P2Q25	P2Q19	P2Q15	P2Q27	P2Q18		
0.12	-0.07	0.07	0.02	-0.02	-0.00		

P2Q10

P2Q10	Empath	P2Q11	P2Q9	P2Q5	P2Q6	P2Q12	P2Q2
1.00	0.60	0.49	0.45	0.38	0.36	0.35	0.34
P2Q13	GPA	P2Q3	Commun	P2Q16	P2Q8	P2Q20	P2Q24
0.31	0.30	0.30	0.26	0.25	0.23	0.22	0.16
P2Q1	P2Q21	P2Q17	P2Q14	P2Q22	P2Q4	P2Q19	P2Q7
0.15	0.15	0.15	0.15	0.14	0.11	0.11	0.11
P2Q25	P2Q23	P2Q18	P2Q26A	P2Q15	P2Q27		
-0.10	0.10	0.10	-0.07	0.05	0.05		

P2Q11

P2Q11	Empath	P2Q10	P2Q12	P2Q9	P2Q5	P2Q2	P2Q13
1.00	0.65	0.49	0.46	0.45	0.42	0.36	0.36
P2Q6	P2Q3	P2Q20	Commun	P2Q8	P2Q16	GPA	P2Q21
0.34	0.31	0.30	0.28	0.26	0.23	0.22	0.22

Intercorrelation Matrix for Scale Items in
Order of Strength of the Relationship

P2Q11 (continued)

P2Q14	P2Q1	P2Q17	P2Q23	P2Q15	P2Q4	P2Q25	P2Q7
0.21	0.17	0.17	0.16	0.14	0.13	-0.12	0.12
P2Q22	P2Q24	P2Q26A	P2Q18	P2Q19	P2Q27		
0.10	0.09	-0.07	0.07	0.06	0.01		

P2Q12

P2Q12	Empath	P2Q11	P2Q9	P2Q8	P2Q6	P2Q5	P2Q13
1.00	0.67	0.46	0.42	0.42	0.41	0.39	0.39
P2Q3	P2Q2	P2Q10	Commun	P2Q14	P2Q20	P2Q24	GPA
0.39	0.36	0.35	0.33	0.31	0.28	0.25	0.24
P2Q16	P2Q21	P2Q17	P2Q1	P2Q23	P2Q4	P2Q19	P2Q22
0.23	0.21	0.20	0.19	0.18	0.18	0.16	0.15
P2Q25	P2Q7	P2Q15	P2Q27	P2Q26A	P2Q18		
-0.11	0.08	0.04	-0.01	-0.01	0.00		

P2Q13

P2Q13	Empath	P2Q9	P2Q6	P2Q5	P2Q12	P2Q11	P2Q10
1.00	0.60	0.44	0.41	0.39	0.39	0.36	0.31
P2Q2	P2Q8	P2Q3	Commun	GPA	P2Q16	P2Q17	P2Q1
0.30	0.28	0.28	0.24	0.21	0.20	0.20	0.17
P2Q20	P2Q7	P2Q4	P2Q14	P2Q24	P2Q15	P2Q22	P2Q18
0.17	0.16	0.14	0.13	0.13	0.12	0.10	0.10
P2Q19	P2Q23	P2Q21	P2Q27	P2Q25	P2Q26A		
0.08	0.08	0.07	-0.04	-0.03	-0.02		

P2Q14

P2Q14	Empath	P2Q1	COMMUN	P2Q12	P2Q4	P2Q17	P2Q11
1.00	0.41	0.35	0.31	0.31	0.27	0.27	0.21
P2Q8	P2Q18	P2Q22	P2Q20	P2Q23	P2Q6	P2Q21	P2Q3
0.21	0.20	0.20	0.20	0.18	0.18	0.17	0.16
P2Q10	P2Q13	P2Q24	P2Q7	P2Q9	P2Q19	P2Q15	P2Q5
0.15	0.13	0.13	0.12	0.12	0.12	0.11	0.10
GPA	P2Q2	P2Q26A	P2Q25	P2Q16	P2Q27		
0.09	0.09	-0.07	-0.07	0.06	-0.03		

Intercorrelation Matrix for Scale Items in
Order of Strength of the Relationship

P2Q15

P2Q15	P2Q18	Commun	P2Q17	P2Q19	P2Q20	P2Q7	P2Q4
1.00	0.53	0.52	0.45	0.33	0.22	0.22	0.15
Empath	P2Q11	P2Q16	P2Q22	P2Q13	GPA	P2Q14	P2Q3
0.15	0.14	0.14	0.12	-0.12	0.11	0.11	0.09
P2Q8	P2Q1	P2Q25	P2Q5	P2Q10	P2Q27	P2Q12	P2Q6
0.09	0.07	-0.07	0.06	0.05	-0.05	0.04	0.04
P2Q21	P2Q2	P2Q26A	P2Q9	P2Q23	P2Q24		
0.03	0.02	0.02	0.02	0.01	-0.00		

P2Q16

P2Q16	Commun	Empath	P2Q3	P2Q19	P2Q9	P2Q5	P2Q8
1.00	0.50	0.39	0.32	0.31	0.29	0.28	0.27
P2Q10	P2Q22	P2Q12	P2Q2	P2Q20	P2Q11	P2Q6	P2Q23
0.25	0.24	0.23	0.23	0.23	0.23	0.22	0.21
P2Q1	P2Q21	P2Q13	P2Q4	P2Q15	P2Q18	P2Q17	P2Q24
0.21	0.20	0.20	0.18	0.14	0.12	0.10	0.10
GPA	P2Q7	P2Q14	P2Q25	P2Q26A	P2Q27		
0.08	0.08	0.06	-0.04	0.02	0.00		

P2Q17

P2Q17	Commun	P2Q15	P2Q19	P2Q18	Empath	P2Q14	P2Q6
1.00	0.59	0.45	0.43	0.40	0.31	0.27	0.23
P2Q20	P2Q7	P2Q5	P2Q12	P2Q13	P2Q21	P2Q24	P2Q9
0.21	0.21	0.20	0.20	0.20	0.19	0.18	0.18
P2Q1	P2Q4	P2Q22	P2Q11	P2Q2	P2Q10	P2Q23	P2Q3
0.18	0.17	0.17	0.17	0.16	0.15	0.14	0.14
P2Q16	P2Q8	P2Q25	GPA	P2Q27	P2Q26A		
0.10	0.08	-0.07	0.43	0.04	-0.02		

P2Q18

P2Q18	P2Q15	Commun	P2Q17	P2Q19	P2Q4	P2Q20	GPA
1.00	0.53	0.49	0.40	0.36	0.23	0.22	-0.21
P2Q14	P2Q7	P2Q1	Empath	P2Q22	P2Q16	P2Q13	P2Q10
0.20	0.20	0.18	0.14	0.12	0.12	0.10	0.10

Intercorrelation Matrix for Scale Items in
Order of Strength of the Relationship

P2Q18 (continued)

P2Q5	P2Q11	P2Q8	P2Q2	P2Q21	P2Q24	P2Q26A	P2Q27
0.09	0.07	0.05	0.03	0.03	-0.03	0.03	0.02
P2Q23	P2Q6	P2Q25	P2Q3	P2Q9	P2Q12		
0.02	0.01	0.01	0.01	-0.00	0.00		

P2Q19

P2Q19	Commun	P2Q17	P2Q18	P2Q15	P2Q16	P2Q20	Empath
1.00	0.58	0.43	0.36	0.33	0.31	0.22	0.22
P2Q4	P2Q1	P2Q7	P2Q22	P2Q8	P2Q12	P2Q21	P2Q5
0.20	0.20	0.18	0.18	0.17	0.16	0.15	0.15
P2Q6	P2Q14	P2Q23	P2Q3	P2Q10	P2Q24	P2Q13	P2Q9
0.13	0.12	0.11	0.11	0.11	0.10	0.08	0.07
GPA	P2Q25	P2Q11	P2Q2	P2Q26A	P2Q27		
-0.07	-0.07	0.06	0.04	-0.01	0.00		

P2Q20

P2Q20	Commun	Empath	P2Q11	P2Q5	P2Q12	P2Q23	P2Q21
1.00	0.55	0.38	0.30	0.29	0.28	0.28	0.25
P2Q6	P2Q22	P2Q8	P2Q16	P2Q18	P2Q10	P2Q15	P2Q19
0.24	0.23	0.23	0.23	0.22	0.22	0.22	0.22
P2Q3	P2Q17	P2Q2	P2Q14	P2Q4	P2Q1	P2Q24	P2Q13
0.22	0.21	0.20	0.20	0.20	0.18	0.18	0.17
P2Q9	P2Q7	P2Q27	P2Q25	GPA	P2Q26A		
0.16	0.15	0.11	-0.09	0.08	-0.05		

P2Q21

P2Q21	Commun	Empath	P2Q23	P2Q22	P2Q5	P2Q20	P2Q11
1.00	0.49	0.32	0.31	0.29	0.27	0.25	0.22
P2Q12	P2Q2	P2Q1	P2Q16	P2Q4	P2Q17	P2Q6	P2Q9
0.21	0.21	0.21	0.20	0.20	0.19	0.18	0.18
P2Q3	P2Q14	P2Q8	P2Q10	P2Q19	P2Q24	P2Q7	P2Q13
0.17	0.17	0.17	0.15	0.15	0.11	0.09	0.07
GPA	P2Q18	P2Q26A	P2Q25	P2Q15	P2Q27		
0.07	0.03	0.03	-0.03	0.03	0.01		

Intercorrelation Matrix for Scale Items in Order of Strength of the Relationship

P2Q22

P2Q22	Commun	P2Q23	P2Q21	P2Q16	P2Q20	Empath	P2Q24
1.00	0.60	0.42	0.29	0.24	0.23	0.23	0.20
P2Q14	GPA	P2Q8	P2Q19	P2Q17	P2Q9	P2Q12	P2Q4
0.20	0.20	0.19	0.18	0.17	0.17	0.15	0.15
P2Q6	P2Q3	P2Q10	P2Q15	P2Q18	P2Q2	P2Q5	P2Q13
0.15	0.14	0.14	0.12	0.12	0.11	0.10	0.10
P2Q11	P2Q1	P2Q26A	P2Q7	P2Q27	P2Q25		
0.10	0.10	-0.07	0.06	-0.01	-0.01		

P2Q23

P2Q23	Commun	P2Q22	P2Q21	P2Q20	Empath	P2Q2	GPA
1.00	0.51	0.42	0.31	0.28	0.25	0.24	0.23
P2Q3	P2Q16	P2Q5	P2Q14	P2Q12	P2Q9	P2Q11	P2Q25
0.22	0.21	0.20	0.18	0.18	0.17	0.16	-0.14
P2Q17	P2Q24	P2Q6	P2Q19	P2Q1	P2Q8	P2Q10	P2Q26A
0.14	0.13	0.12	0.11	0.11	0.11	0.01	-0.08
P2Q13	P2Q4	P2Q7	P2Q18	P2Q27	P2Q15		
0.08	0.07	0.05	0.020	-0.01	0.01		

P2Q24

P2Q24	Commun	P2Q12	Empath	P2Q22	P2Q6	P2Q17	P2Q20
1.00	0.40	0.25	0.22	0.20	0.20	0.18	0.18
P2Q9	P2Q8	P2Q10	GPA	P2Q3	P2Q23	P2Q13	P2Q14
0.17	0.17	0.16	0.14	0.14	0.13	0.13	0.13
P2Q5	P2Q21	P2Q16	P2Q19	P2Q1	P2Q11	P2Q7	P2Q2
0.12	0.11	0.10	0.10	0.10	0.10	-0.06	0.06
P2Q26A	P2Q4	P2Q27	P2Q18	P2Q25	P2Q15		
-0.05	0.04	0.03	-0.03	0.01	-0.00		

P2Q25

P2Q25	P2Q27	P2Q26A	Empath	P2Q23	P2Q3	P2Q5	P2Q11
1.00	0.28	0.25	-0.15	-0.14	-0.14	-0.13	-0.12
P2Q2	P2Q8	P2Q12	P2Q10	P2Q6	GPA	P2Q20	Commun
-0.11	-0.11	-0.11	-0.10	-0.10	-0.10	-0.09	-0.07

Intercorrelation Matrix for Scale Items in
Order of Strength of the Relationship

P2Q25 (continued)

P2Q14	P2Q9	P2Q17	P2Q15	P2Q19	P2Q7	P2Q16	P2Q21
-0.07	-0.07	-0.07	-0.07	-0.07	-0.04	-0.04	-0.03

P2Q13	P2Q1	P2Q22	P2Q18	P2Q4	P2Q24
-0.03	-0.02	-0.01	0.01	-0.01	0.01

P2Q26A

P2Q26A	P2Q27	GPA	P2Q25	P2Q9	P2Q1	P2Q23	P2Q14
1.00	0.36	-0.26	0.25	-0.13	0.09	-0.08	-0.07

P2Q10	P2Q2	P2Q11	P2Q22	Empath	P2Q5	P2Q8	P2Q24
-0.07	-0.07	-0.07	-0.07	-0.07	-0.06	-0.06	-0.05

P2Q7	P2Q20	P2Q6	P2Q21	P2Q18	Commun	P2Q3	P2Q17
0.05	-0.05	-0.03	0.03	0.03	-0.03	-0.02	-0.02

P2Q13	P2Q15	P2Q16	P2Q4	P2Q19	P2Q12
-0.02	0.02	0.02	-0.02	-0.01	-0.01

P2Q27

P2Q27	P2Q26A	P2Q25	P2Q1	P2Q3	P2Q20	P2Q7	P2Q2
1.00	0.36	0.28	0.14	0.11	0.11	0.08	0.08

P2Q6	Empath	P2Q10	P2Q15	P2Q17	P2Q13	Commun	P2Q24
0.06	0.06	0.05	-0.05	0.04	-0.04	0.04	0.03

P2Q14	P2Q4	P2Q18	P2Q5	P2Q9	GPA	P2Q22	P2Q23
-0.03	-0.03	0.02	0.02	-0.02	-0.02	-0.01	-0.01

P2Q12	P2Q11	P2Q21	P2Q16	P2Q8	P2Q19
-0.01	0.01	0.01	0.00	-0.00	0.00

Empathy

Empathy	P2Q9	P2Q5	P2Q6	P2Q12	P2Q11	P2Q3	P2Q2
1.00	0.70	0.68	0.68	0.67	0.65	0.64	0.61

P2Q10	P2Q13	P2Q8	Commun	P2Q1	P2Q14	P2Q16	P2Q20
0.60	0.60	0.56	0.49	0.46	0.41	0.39	0.38

P2Q4	GPA	P2Q7	P2Q21	P2Q17	P2Q23	P2Q22	P2Q24
0.36	0.34	0.34	0.32	0.31	0.25	0.23	0.22

P2Q19	P2Q25	P2Q15	P2Q18	P2Q26A	P2Q27
0.22	-0.15	0.15	0.14	-0.07	0.06

Intercorrelation Matrix for Scale Items in
Order of Strength of the Relationship

Commun

Commun	P2Q22	P2Q17	P2Q19	P2Q20	P2Q15	P2Q23	P2Q16
1.00	0.60	0.59	0.58	0.55	0.52	0.51	0.50
P2Q18	P2Q21	Empath	P2Q24	P2Q12	P2Q5	P2Q14	P2Q4
0.49	0.49	0.49	0.40	0.33	0.32	0.31	0.30
P2Q8	P2Q3	P2Q1	P2Q11	P2Q6	P2Q9	P2Q10	P2Q2
0.29	0.29	0.29	0.28	0.28	0.26	0.26	0.25
P2Q13	P2Q7	GPA	P2Q25	P2Q27	P2Q26A		
0.24	0.21	0.11	-0.07	0.04	-0.03		

GPA

GPA	P2Q9	Empath	P2Q6	P2Q10	P2Q8	P2Q26A	P2Q12
1.00	0.36	0.34	0.33	0.30	0.27	-0.26	0.24
P2Q23	P2Q2	P2Q11	P2Q13	P2Q18	P2Q22	P2Q5	P2Q3
0.23	0.23	0.22	0.21	-0.21	0.20	0.19	0.18
P2Q24	P2Q15	Commun	P2Q25	P2Q14	P2Q16	P2Q20	P2Q21
0.14	-0.11	0.11	-0.10	0.09	0.08	0.08	0.07
P2Q19	P2Q7	P2Q17	P2Q4	P2Q27	P2Q1		
-0.07	0.05	0.04	0.02	-0.02	-0.01		

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